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# "WE HAVE REASON TO THINK . . ."*

BY

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I doubly appreciate the honour of being asked to give the prizes here to-day. In the first place it emphasizes the association which has lasted so long between my university and your hospital. We have recently benefited by the munificent bequest of one who was a loyal son of Cambridge and who also served this hospital well; I mean the late Mr. Marmaduke Sheild. Through that bequest we have been able, among other things, to re-establish pharmacology in its proper place, and we confidently expect that Professor Verney will continue the successful work of that department, which owed so much in the past to the late Dr. W. E. Dixon.

In the second place it emphasizes another association: that between my hospital of St. Bartholomew's and yours. That we have sent you good men the past and the present attest alike. At the present time my predecessor, Sir Humphry Rolleston, and your dean, Dr. Anthony Feiling, exemplify the association between St. George's and Cambridge on the one side and St. Bartholomew's on the other. In the past the name which has perhaps most closely linked our hospitals together is that of John Hunter, who may be said to be the first to regard medicine as a branch of experimental biology. His famous aphorism, "Don't think, try," may have been misinterpreted, but never more sardonically than by a friend of mine, who commented that out of respect to John Hunter the medical profession for more than a century had been trying not to think. And although we realize that Hunter was merely advocating experiment rather than speculation, there is a sting of truth in the comment. A hundred and fifty years ago the need for the collection of data was paramount; to-day there is at least an equal need for the data to be assimilated and co-ordinated by careful thinking.

## Man's Orientation of Man

Let us think for a moment of the enormous change that has occurred since the beginning of the nineteenth century in our realization of the nature and position of man. True the astronomers had already orientated man in space, but there was no conception of his position in time. The grandfathers of all my contemporaries believed that the world was created in 4004 B.C. The record of the rocks was not correctly deciphered until early in the nineteenth century: geology proved to be the Rosetta stone for the interpretation of the age of the world. Then came biology to teach man that he was no special creation, but the outcome of a long process of evolution. In these latter days psychology has shown not only that this applies to man's structure, but that there are sub-human strata also in the dark recesses of his mind. Finally, the modern physicist is upsetting the orderly Newtonian physics and neat Daltonian chemistry in which we seniors were brought up, until man is beginning to doubt whether there is any substance in the material universe at all. He is being told that even mathematical truth is only a tribute to the innate craving for order in his own mind. He is being thrown back on the old adage "Cogito, ergo sum." All the more reason, then, that he should try to think.

It is perhaps a too ambitious task to attempt to describe how man came to think; but it may be of interest to note how different is our approach to such a problem from the methods followed in the seventeenth century by such a man as John Locke. Natural science has given us an inevitable bias to proceed from the simple to the complex. The scientist of to-day does not start with the human understanding as Locke did, but with the genesis of the nervous system. For the time being man seems to have lost his curiosity as to the origin of life; he recognizes that this is a problem beyond him. Fifty years ago it was not so, and colloidal jellies dredged from the depths of the sea were eagerly scanned for evidence of the transition from the non-living to the living, while Charlton Bastian attempted to demonstrate spontaneous generation to the International Medical Congress in London in 1881, regardless of the horrified and repeated cries of "Mon Dieu, mon Dieu" from the lips of the great Pasteur.

But if we are willing to leave the origin of life unexplored, we are the more interested in its manifestations. Amid all the bombardment which atoms receive at the hands of physicists, until we are doubtful of the entity of any element, life remains faithful to its central carbon atom, with its apparently infinite capacity for forming chains and rings. Only with such chains and rings do we find life associated. Another striking characteristic of life, to which Sir Gowland Hopkins recently called attention, is that it alone, in a universe of which the energy is ceaselessly running down, can oppose a dam, as it were, and hold up that energy at a useful level. It cannot reverse the second law of thermodynamics, of course, but it can delay its action. On this globe, at least, we can assert that the one thing which checks the degradation of energy is life. That is one of its proud prerogatives.

## Nerve Cells of First Living Organisms

That life, whatever its origin, started and still starts as a single cell is a biological axiom. The next step was when a merely colonial existence of single cells, all doing the same work, was fused into a new entity in which different cells did different work. But even single-celled organisms, or colonies of such, show a characteristic feature of life in their irritability, in the biological sense, or responsiveness to various stimuli. In the simplest forms

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of life this was of the nature of response to light and to chemical substances, a method of response which we still show. But a subtler method was soon evolved when many-celled organisms appeared. The general "responsiveness" of the outer protective coat or skin became specialized in two different types of cells. They were, indeed, the parents of sensory and of neuro-muscular cells. It became necessary for the guidance of the body that such perceptive cells should develop particularly at its front end. Here, therefore, the organs of special sense appear, by which the animal knows what it is approaching, by which, indeed, as Sherrington phrased it, the animal carries its immediate future in front of it.

Before long these special cells, which we may now call nerve cells, began to retreat to a more protected position, and to congregate into the beginnings of a central nervous system, while retaining their connexion with the exterior by means of nerve fibres. It is a little difficult to realize that the brain and spinal cord are buried embryonic skin, and that it is skin which receives, and modified skin which interprets, the messages we receive from the outside world.

### Development of Central Nervous System

Although the sensory message can at once evoke a motor reply, as in a simple reflex action, it is the appearance of a new nerve cell—the connector, or association cell—between the sensory and motor units, which marks the beginning of a central nervous system, and it is the multiplication of such association cells on which the growth and increasing complexity of the nervous system mainly depends. Unfortunately for the invertebrates the arrangement of this nervous system around the mouth restricts the growth of the brain, so much that only a limited number of patterns, as it were, are possible in their responses. To a remarkable extent this limitation was surmounted by the social habits of certain insects where the whole structure is modified according to the duties they have to perform. In the invertebrates with the most developed brains the mouth is so closely encircled by the nervous system that they have, perforce, to confine their feeding to blood sucking.

The evolution of vertebrates, however achieved, freed the brain for almost unlimited development. And when some fishes struggled gasping on to the land and became amphibians further development was urgently called for, not only to face a new environment, but to restrain automatic movements, which, however appropriate to fishes balancing themselves in water, had become highly inappropriate to land animals in which fins had become limbs. And so we find, hand-in-hand, the development of increased skilled movements and of the inhibition of unsuitable movements. At this stage we meet not only with simple but also with conditioned reflexes. When Pavlov, already famous for his researches on digestion, visited England in 1906 to describe the way in which he could modify the reflexes in his dogs by training, I little realized how far-reaching the influence of those observations would be. May I say, in passing, that he was particularly happy in his selection of his animal, for no animal is so malleable at the hands of man, whether as to structure or as to conduct, as the dog. The cat will condition her own reflexes, but for the dog our prohibitions soon become his inhibitions.

I need not recapitulate Pavlov's well-known experiments, but I would like to emphasize just three points. First, the chain of association of ideas in a dog is a short one, not being capable of more than three links, whereas in ourselves, with our much greater wealth of association cells, the chain of ideas aroused by, say, a few chords of music may extend almost to infinity. Secondly, if the dog is deliberately given signals difficult for him to discriminate, all his conditioned reflexes become upset and he becomes neurotic. Pavlov maintains that this is due to his being exposed to an excessive demand for internal inhibitions, a cause, one may say, which is responsible for human neuroses also. Thirdly, if the area of inhibitions is spread widely enough, the dog simply goes to sleep. Note the behaviour of your dog at your meal time: if he knows he will not be fed himself, and that your attention will be diverted from himself, the series of negations piles up and soon he is fast asleep, until you rise from the table and he wakes at once. When we wish to sleep we cut off as many afferent impulses as we can, and seek darkness—not to mention quiet, if haply we may find it in this generation which seeketh after noise. But nevertheless in darkness and in quiet the long chain of association cells may carry impulse after impulse, and we may woo sleep in vain.

I should like to emphasize again the great leap forward which the brain achieved when vertebrates took to the land. In the ancient part of the brain common to fishes and all other vertebrates reside the centres which order the functions of organic life, but in this part are also the centres of emotional expression, such as we deliberately deny to fishes, when, for instance, we describe a man as "fish-like." Of recent years we have learned much of the functions of these basal ganglia from the grotesque and cruel ravages of the epidemic of lethargic encephalitis. Not only did it disorganize the statics of the body, but it often played havoc with the emotions and conduct of the unfortunate victim. And so we discovered how deep down in the brain the emotions and passions resided, and how violent and unrestrained might be their manifestations when cut off from the control of the calmer, more reasoning, newer part. Disease thus confirmed and extended the experimental evidence obtained by Sherrington and by Head and Rivers.

### Sensory Nerve Stimuli and Brain Activity

We have travelled far in this brief and, of necessity, superficial review of the building up of the brain. We must now hark back for a moment to the periphery, where we left the nerve fibres embedded in the skin, for they, meanwhile, have been wrapping themselves up in touch corpuscles of varying structure and complexity. Naked nerve endings can apparently only convey one kind of sensation, that of pain—for example, those on the surface of the cornea. Any nerve ending, clothed or naked, if adequately stimulated, can give rise to pain. But the end-organ allows of discrimination; it can register an impression too slight to cause pain. Thus the retina can convey the sensation of a dim light, while a blinding light may cause actual pain. A light touch or gentle heat are appreciated as such, but either can be intensified to cause pain. These sensory structures, then, are like outposts to the body, increasing its awareness and powers of discrimination and selection, but also ready to flare up into urgent messages of pain. At the other end these messages are received by the optic thalami and relayed to the sensory cortex of the brain, which has the power within limits to decide how to act. Thus the same painful message may result in the recipient launching out a violent blow against the offender; or the cortex, recognizing that the pain is due to the knife of the surgeon, cruel only to be kind, inhibits movement of the part attacked, and diverts its energy into a loud yell. Or the attention of the cortex may be diverted, so that the painful stimulus is not felt, and a man is unaware of a wound received in the excitement of battle.

Ordinary sensations, then, have a low threshold; they enter the nervous system easily, and, as Adrian has shown, travel rapidly; they are dealt with by the brain according to its needs and moods. Sensations of pain have a higher threshold, not gaining admission so easily,

nor travelling so fast ; but, once admitted, may give rise to a positive explosion of nervous activity. For further elaboration of this line of thought I may refer you to the philosophical writings of Wilfred Trotter.

Clearly the activities of the brain depend largely on the stream of impulses received from the outside world. Michael Foster recorded a case of a boy who had general cutaneous anaesthesia, who was deaf, and also blind in one eye. His sole tie with the outside world was through the remaining eye, and when this was covered he went to sleep. But the case of Helen Keller shows how adequately the brain can develop even when the avenues of sight and hearing are both closed. She, however, was nearly 2 years old when she became blind and deaf. For that the brain needs the stimulus of such impulses even to complete its structure is shown by the fact that a baby born prematurely and dying at the time it should have been born has a more developed brain than a baby stillborn at full term, and that although it had been exposed to an environment unsuited to its tender age. If structure is necessary for function the converse also holds in the case of that master tissue, the central nervous system.

### Instinct and Intelligence

But the central nervous system has to deal both with internal and with external relations, to ensure both internal harmony and harmony as far as may be with the outside world. The infant comes into the world well equipped in the former respect, but very imperfectly in the latter. Its complete helplessness is in sharp contrast with that of many lower animals at birth. And that leads us to contrast instinct with intelligence. A recent writer, H. E. Mellersh, said :

"Most of us have no great affection for fishes or lizards or snakes, nor feel anything but intense dislike for that large, grim, silent phylum that comprises the crabs and lobsters, the spiders and scorpions, and all the insects. I have often come away from the insect house at the Zoo with a feeling of real nausea, and wondered what it was that disgusted, depressed, and even half-frightened me. Positively, I think, it is their slow, reasonless, undivertible intentness. But what is it negatively? What do they lack? One might say they lacked a sense of humour, and be stating a rather obvious but still somehow relevant fact. But one probably could not do better than say: they never play."

This division of the forms of life into those that can and do play and those that do not and cannot is, in fact, an important and significant one. Only mammals and birds play—the warm-blooded creatures. And it is the warm-blooded creatures whose lives are by far the least guided by instinct ; there is the significant connexion. A German, Karl Groos, was the first to stress and satisfactorily to explain this connexion. And he did it so well that although his book, *The Play of Animals*, was first published in 1897, it is still not superseded. The insect, it is pointed out by Groos, is marvellously complete with instincts ; it has practically nothing to learn. The mosquito can fly perfectly, and sting perfectly, as soon as it has changed from that eagerly wriggling larva, hanging head downwards from the surface of the water, and has squeezed out from its sheath and dried its wings. The bee can build her cells, always hexagonal, and can perform the honey-dance to inform her mates of a new store found, all without learning. But with birds and mammals it is different. The inherited memory is not there ; those incredibly specialized brain tracks do not exist. Indeed, it is only with a great effort that we can realize how much of the elementary art of keeping alive we humans have had to learn.

The advantage would seem at first sight to be with those forms of life so well equipped with particular instincts. And yet we all know that the skill of the mammal, his power to reason and to adjust his action finely in an emergency, is an infinitely more useful possession than the most perfect set of particular (but unadaptable) instincts. The only question is, How does the mammal acquire this skill, this power of reasoned and delicate response? And the answer is, of course, play. So Karl Groos, with much detail, pointed out. He called play an instinct in itself—one generalized instinct in substitution for a great number of particular ones. He showed in strict Darwinian fashion how the possession of such a generalized instinct would have a "survival value." If you have acquired no complete set of cut-and-dried answers to the problems of life, but only a single urge to find out the answers for yourself, then you have set a premium at once upon intelligence. And since intelligence is without question Nature's most powerful weapon for progress, those who use intelligence will win the race from those who do not.

Karl Groos quotes innumerable examples to prove his point that play is for the young an instinct—that is to say, a definite urge. And what is play? It is mimicry and make-believe. It is, biologically speaking, a practice of powers that have appeared in a crude form early in life, so that when they are needed later they may already be near perfection. It is not enough for the grown animal to have the simple and unelaborated instinct to fight or to fly in an emergency ; he must have practised those responses assiduously. The necessity for mimicry, therefore, mimicry of one's elders, is obvious. But the need for make-believe is essential too. For the real situation either will not or cannot be allowed to arrive in youth. The kitten must needs be able to pretend to itself that the paper is the live mouse before it can acquire the skill to catch one ; the hare must learn to be fleet and nimble without a real carnivore after it every time. And so we begin to see how the enormous power to make-believe arrives in us human beings. It has, again, a "survival value" ; it is part of us, it is a fundamental instinct. Our theatre and our arts come (via the meetings, ceremonies, and solemn dances of primitive man) from this manifestation of the mammal's necessary urge to play.

And though that is an old story, perhaps it has not been pondered upon quite enough. Karl Groos pondered upon it further, and came to the conclusion that there was an added inducement to make-believe in the "freedom" that it gave. In real life we are too often the playthings of the opposing forces about us, but in make-believe it is ourselves who are always the masters, who make things happen. Life, in fact, is too real—and so play is earnest. All we warm-blooded animals love to feel that we are the prime movers of something, however trivial ; we love to "work our own sweet will." We all (as the psychologists say now) love to exert the power instinct.

Man loves to play and make-believe through all his life ; there we are different from the other mammals, who do not seem much driven by the play-instinct once they are grown up. It is the birds who, besides ourselves, play most when they are no longer young. And it is the birds who are excitable creatures, have a blood heat even above our own, and have another element and another dimension in which to sport. And yet man is the supreme grown-up play addict. The urge has, in fact, become most elaborated in him, the most elaborated creation. It may be caused by many desires, seemingly contradictory, but all arising from that original generalized instinct of the warm-blooded. We may play from a desire to practice and "keep fit," a desire to turn from difficult reality to pleasant make-believe, a desire to exercise power and skill, a desire for excitement, a desire to achieve "thrills." And here we may recall Keith's saying that man, of all animals, has retained the power to carry on youthful

characteristics into adult life. He may, indeed, carry them too far, as I thought when a man of 45 told me that the one thing he lived for was to lower his handicap at golf!

Elliot-Smith tells us that the development of intelligence was enormously helped for those animals who, by shortening their noses, were able to achieve binocular and therefore stereoscopic vision, thus obtaining an accurate sense of form and solidity. This led to a greatly increased prehensile and tactile capacity in the fore-limbs, and so knowledge of the outside world was increased in its turn.

### Reason and the Emotions

But intelligence and accurate perception, however necessary to thought, do not themselves constitute thought. If Socrates, discoursing with Phaedro on the banks of the Ilissus, could not define thought, neither can I be expected to do so. But I like Rodin's sculptured vision of "Le Penseur." At first sight that low-browed squatting figure, brooding with chin resting on knuckle, hardly seems to typify thought, until one realizes that it represents the dawn of thought, the painful gestation of ideas in the caveman's mind. At what stage, precisely, do the twin streams of temperament arising from the internal afferent impulses and from perceptions of the outside world, ascending through chains of association cells enriched by experience, attain in the highest levels of the brain to the dignity of abstract thought?

You will, I hope, forgive me if I attempt a biological rather than a metaphysical approach to a problem I am not prepared to solve. For I do believe that this method has in comparatively few years carried us further towards a comprehension of the workings of man's mind than centuries of metaphysics have achieved. As Robert Bridges said: "Man's Reason is in such deep insolvency to sense" that

> "Not without alliance of the animal senses
> Hath she any miracle."

It may be fairly said that one of the most recent achievements of man's reason is his recognition of how unreasonable a being he is. To quote the same poet:

> "How small a part of Universal Mind can conscient Reason claim!
> 'Tis to the unconscious mind as the habitable crust is to the mass of the earth."

But this narrow crust of reason has a great, and as Rodin saw, a painful task. It has to co-ordinate here and repress there these streams of afferent impulses which, pouring through the basal ganglia, have gained in turbulence and in turbidity by stirring emotional depths inherited from long dead ancestors as well as those acquired in earlier life. It is no light task to provide for the precipitation of the mud, the clarification of the streams, and, to pursue the simile, usefully to employ them to irrigate the higher centres for the fertilization of thought. Perhaps, as Adler says, nothing is quite so conscious and nothing quite so unconscious as we imagine. Indeed, the frontier is an indefinite and changing one. But reason properly used will agree to recognize the place that the emotions should be accorded in life.

### Association of Ideas Without Reason

It is perhaps due to mental attitudes in the past which tended to exaggerate the role of reason that there has been an undoubted and undue depreciation of reason in these latter days. For whole nations politics have become total abandonment of the right of judgement into the hands of a dictator, while a religious movement of the day relegates the individual conscience to the guidance of a group. I do not intend to discuss either politics or religion. I merely wish to illustrate how widespread is the individual's lack of confidence to-day in his own power of reason. But perhaps the process can be best observed in certain literary movements, which, starting with an angry reaction against the intellect, such as D. H. Lawrence, for instance, displayed, has gradually deteriorated into what appears to me to be mere baby talk. Whatever this may mean to the writer himself—or herself, I must add, since Gertrude Stein is one of the most notorious exponents of the "cocky-locky, henny-penny" style of writing, which was formerly reserved for the delectation of the nursery—it can, from the nature of the case, communicate very little to anyone who does not possess the key. That inspiration wells up from the unconscious, or at least the subconscious, would be generally admitted, but just as the highest level of the brain selects the sensory impressions to which it will pay attention, so reason must arrange and select the messages from the emotional levels.

To-day only too often a writer fishes up from the unconscious what appears to him to be a pearl worthy to be treasured, but which seems to the onlooker nothing but a worthless pebble. Why are other people's dreams so utterly boring to everyone except a psycho-analyst? Because the narrator cannot reproduce the emotional affect which accompanied the dream. The artist, by judicious and intellectual arrangement of the material derived from this inspiration, may be able to convey the thrill, but the writers against whom I am protesting persist in hurling the crude material at one in raw slabs. Another barrier to comprehension they raise is this. On the way up from the deeper layers an impulse may run through a series of association cells, stimulating memories which are entirely individual to the person who experiences them. If he flings those associated ideas at us without a clue he is really speaking in a foreign language. Although this method is used even in prose, it is, of course, more frequently employed in what is called modern poetry. Mr. T. S. Eliot, for instance, who is bleakly austere in prose, says that in poetry meaning only plays the part of the lump of meat in the turned-up end of the dog stealer's trousers. Meaning is only required to focus the reader's attention until the poem has him in thrall. Well that may be so, but I still hanker after that bit of meat when I read an alleged poem like this:

> "If it was to be a prize a surprise
> if it was to be a surprise to realise,
> if it was to be if it were to be, was it to be.
> What was it to be. It was to be what it was.
> And it was. So it was. As it was. As it is.
> As it as it is. It is and as it is and as it is.
> And so and so as it was.
> Keep it in sight alright."

"Milton, thou shouldst be living at this hour. England hath need of thee." One can parallel this passage from Gertrude Stein's prose.

It is interesting to recall, by the way, that a tendency to link words together by sound rather than by meaning is a reversion to an infantile mode. The repetition of such sounds is attributed to the control over the speech not being as yet completely developed. It is shown in the first words the child speaks, "Mamma, Papa, Nana," and this kind of repetition is to be noted in the stories which delight very young children. It is therefore not without significance that one of the new artistic movements christened itself "Dada."

Well, the more youthful members of my audience may say, How can you expect to appreciate the new beauties that are being revealed by these modern writers? You are so hardened by established conventions and outworn modes that naturally you are deaf to this new music. Very well; then let me ask you to listen to the views of Mr. John Sparrow, an eminent but youthful critic. His recent book, *Sense and Poetry*, from which the

following are a few passages, is a devastating criticism of this new school:

"We are now to be told that . . . experience, hitherto taken to be the raw material of art, should be accepted as its finished product. . . . One of the chief reasons for the unintelligibility of modern verse is the predominance of associations that are personal to the writer. Egoism is carried so far that poems are written for the appreciation of which a complete account of their author's external and internal life is needed. . . . Those who write unintelligible poetry . . . find themselves justified by the beliefs of an increasingly popular school of thought which in effect denies the existence of the intellect. . . . To make the fullest use of the associative value both of words and of what words stand for has been the task of literature since literature was first attempted. . . . Modern writers therefore do not break new ground in paying attention to the effects of association. What is new in their writing is the result of their paying attention to association alone and exploring it so thoroughly that meaning is entirely or almost entirely superseded."

Or, as Mr. Desmond MacCarthy says, it is hopeless to reproduce in print the very texture of consciousness, such as leads Mr. James Joyce to record the jabberings of the idiot or flat-headed savage who talks unheard in the backward abyss of our minds and sometimes screams audibly in delirium.

### Reason by which to Think

Mr. Sparrow has clearly defined the symptoms, but as medical men we want to go behind the symptoms and determine the causes at work, here as elsewhere. Mr. Gerald Heard, in his recent book *These Hurrying Years*, has attempted this task. He attributes them to a growth in self-consciousness, a new realization of what the mind is doing. While this development has seemed to many onlookers only "the treason of the clerks," the betrayal of reason, the blind escape into childishness, superstition, and self-comforting illusion, he does not so regard it. What we have to focus upon is the force, the cause which has produced that reaction. He thinks that we need not be unduly perturbed by the new experiments, since they are all part of a growth which, though largely blind to-day, is making for a new synthesis. He admits that this may be too optimistic, and I think it is clear that the pendulum has swung too far. I have great belief in the capacity of life to adapt itself to its environment. But of one thing I am sure—we shall never achieve a new civilization by denying reason its place. Even though we realize that it does not include the whole of life, it must have the final word. Earlier in the year I quoted a saying of Gaskell's which will bear repetition now: "The race is not to the swift, nor to the strong, but to the wise."

When I was seeking for a title to express the viewpoint to which I wished to direct your attention, I remembered an essay by that charming writer Stephen Paget, in which he said:

"Great words and phrases (may) come down in the world. For instance, I have reason to believe—a phrase of noble birth and of the utmost refinement—is at the mercy of gossip. I have reason to believe that the conductor gave me sixpence short on purpose; and so forth. Quick, let us do honour to this old phrase—for it is descended from two of the stateliest of all words."

It occurred to me to adopt that phrase, hoping thus to make a plea for the restoration of reason to its throne on the highest level of the nervous system: the last to come, the first to go, but all the more to be cherished on that account. Reason is the judge and assessor of our instincts and our emotions, which, however necessary for driving energy, if uncontrolled are but blind leaders of the blind. We have reason by which to think. . . .

# THE LABORATORY TESTING OF DISINFECTANTS

BY

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Disinfection is of two principal kinds: that which is conducted outside the body, with the object of preventing the spread of infection to other persons; and that which is conducted or attempted on or in the body itself in order to avert or relieve infection in the patient so treated. The first of these uses is mainly in the hands of the nurse or the sanitary inspector; to the second the attitude of the profession varies between a faith which is often misplaced and complete scepticism. This is hardly extraordinary, because either of these attitudes, or any intermediate standpoint, could be justified from the literature of the last thirty years. This literature is profuse, contradictory, and often highly misleading. For this the complexity of the subject is in part to blame, and in part the methods of the investigator. That is to say, there are at least six important classes of disinfectant, each with perhaps twenty members, and there are a dozen important families of bacteria the many members of which may behave quite differently; but, what is worse, there is a quite unlimited variety of conditions under which the action of one on the other may be observed, and in doing this there are pitfalls which may lead to entirely erroneous conclusions.

An unfortunate result of this is that fantastic claims are often made which are no doubt answerable for a good deal of distrust in disinfectants generally. A single example will serve to illustrate this confusion. Of all disinfectant actions, that of mercury salts might be supposed to be fully and generally understood, since it has been tested *ad nauseam* and freely utilized in medicine for many years. It is almost universally believed, and endless published experiments suggest, that extremely dilute solutions of perchloride of mercury kill bacteria, even in short periods; but Shippen[1] has recently shown that a 1 in 200 solution does not kill *Staphylococcus aureus* in fifteen minutes. If we believe Watson,[2] a 1 in 1,000 solution of mercury biniodide acting for twenty-four hours is the perfect reagent for sterilizing catgut; according to Bulloch,[3] it is quite ineffective even if allowed to act for four years, and even a solution of ten times this strength fails to sterilize catgut in 730 days.

Discrepancies of this kind are not due to chance, or to an erratic behaviour of bacteria beyond human control; they are due to differences in method. The more flattering of the results quoted were obtained by methods which are actually bad, in that they made bacteria appear to have been killed when they quite certainly had not. But enormous differences may exist between results obtained by methods involving no such fallacy on either side, the results in each case being valid for the conditions employed. Thus the phenol coefficient of potassium permanganate acting in distilled water only has been placed at 50; the addition of 1 per cent. of serum reduces it to 0.8.[4] These figures themselves have no absolute validity, since they depend upon several conditions other than the composition of the fluid in which the tests were made. Examples such as this may appear to suggest that the results of any such tests are valueless; it may be argued that so wild a degree of irregularity betokens a proceeding in which there is some inherent fault. The answer to this is that when the conditions of a test are exactly defined and observed its results are consistent within narrow limits of exactitude; the truth is, in fact, ascertainable if the method used is correct.

It is therefore necessary to inquire what are the conditions governing disinfectant action. These conditions apply equally to the laboratory test and to the sphere of practical disinfection, and, although it is customary to deride laboratory conditions as too far removed from those of practice to afford significant results, the truth is that practical conditions can be imitated closely and in almost every particular. The virtue of a test may in fact be held to depend very largely on how far it achieves this, and the whole art of devising it consists in securing the necessary conditions without sacrifice of uniformity.

### Conditions Governing Disinfectant Action

*Concentration of Disinfectant.*—Of this self-evident factor it is only necessary to say that the usual object of a test is to determine what concentration is required in order to destroy bacteria under the further conditions which follow.

*Time of Application.*—The destruction of bacteria by chemical means is not a sudden process but progressive, the more susceptible being destroyed first and the more resistant surviving considerably longer. By an elaborate technique this process can be studied in detail, but routine methods serve only to demonstrate whether or no the whole of the bacteria introduced have been destroyed in a given time. A single arbitrary time period has this disadvantage—that some disinfectants act rapidly and others equally or more serviceable act slowly; examples of these classes respectively are hypochlorites and dyes. A fair comparison between such totally different reagents can only be secured by making observations at varying periods of time. A valuable alternative is to study bacteriostatic as well as bactericidal action—that is, the concentration required to prevent growth as well as that required to kill in a short period of time. For many disinfectants the ratio between these concentrations is about 1:10; for substances whose action is only exerted slowly, such as antiseptic dyes and the class of compound represented by acriflavine, the ratio may be of the order of 1:1000.

*Temperature.*—An increase in temperature within any range accelerates the process of disinfection. The degree of this effect varies; it is very marked in the case of phenol and coal-tar disinfectants (Chick).[5] This factor therefore requires control. In a laboratory maintained at a reasonably constant temperature the errors arising from its neglect may not be considerable, but its accurate regulation, secured by the use of a water-bath, is required for the performance of any standard test.

*Number of Bacteria.*—There is a greater difference than would be expected in the conditions required for killing small and large numbers of bacteria, even though these be contained in the same volume of fluid. That this difference is not due only to more obvious causes is shown by the fact that it obtains even for disinfection by heat (Lange).[6] It is therefore necessary to regulate this number, and it appears preferable that it should be large, at least some millions of living cells. Fantastic results are claimed from time to time in experiments with extreme dilutions of a culture as inoculum—for example, Birkhaug.[7]

*Nature of Bacteria.*—It cannot be emphasized too strongly that the susceptibility of different bacteria to a single disinfectant may vary greatly. This is not merely a question of general resistance depending on structural peculiarity as in sporing bacteria or tubercle bacilli, but a much more complex type of variation, which in the main is quite unexplained. Examples are the extreme susceptibility of staphylococci to the action of violet dyes and of pneumococci to that of optochin. The same bacteria may be highly resistant to disinfectants of another type; an example is the resistance of staphylococci to certain metallic salts (Eisenberg).[8] It is even possible for different strains of the same micro-organism to exhibit varying degrees of resistance. It has been suggested on this account that the proper evaluation of a disinfectant must involve tests with a range of different bacteria.[9] How far this is necessary will depend on the type of use for which it is intended. The most important group of intestinal bacteria is well represented by *B. typhosus*, and bacteria responsible for surgical infections by *Streptococcus pyogenes* and *Staphylococcus aureus*, and tests conducted with these micro-organisms should, broadly speaking, be valid in the respective spheres; but the data in one are not transferable to the other, nor are either necessarily relevant to special purposes of other kinds.

*Presence of Other Material.*—A chemical reaction with the proteins or other constituents of the bacterial cell is the basis of all disinfectant action, and the presence of other material with which the disinfectant will react similarly may therefore prevent the destruction of all the bacteria unless the disinfectant is available in excess. Such other material almost invariably occurs where disinfectants are employed, and an appropriate practical test must therefore introduce it. It is here, in the most essential feature of a test, and that by which it stands or falls as a replica of working conditions, that uniformity of practice almost entirely ceases. It here becomes necessary also to distinguish between disinfectants applied on or in the human body and those used outside it, for which appropriate testing methods clearly must differ, especially in the nature of this added material, or "organic matter." These two classes may conveniently be termed "excremental" and "surgical," and will be considered separately. But there is also a type of test, very generally in use, which ignores this last factor altogether.

### Simple Comparative Tests

The method introduced by Rideal and Walker in 1903[10] consisted of adding a small quantity of *B. typhosus* culture to solutions, both of the disinfectant and of phenol, and cultivating the mixtures at intervals during a short period of time, the result, or coefficient, being an expression of the activity of the disinfectant in comparison with that of phenol. This test has since been modified[11] only in details making for greater accuracy, and the technique for it which was last year adopted as a British standard[12] is substantially the same as that originally proposed. Its only serious rival is the hygienic laboratory test of the United States, first put forward by Anderson and McClintic.[13] This test is essentially of the same nature as the Rideal-Walker; it has been studied more elaborately and repeatedly modified with a view to greater precision,[14,15] perhaps because it has enjoyed official recognition for many years. In its present form it differs from the Rideal-Walker test in the employment of a different culture medium, a different strain of *B. typhosus*, a platinum loop constructed to deliver a more constant inoculum, and in the calculation of the coefficient from readings at four time intervals instead of one. The *Lancet* test, devised by Ponder and Woodhead in 1909,[16] was of similar nature, but *B. coli* served as the test organism, and other modifications were introduced which have since been more criticized than approved or adopted.

Tests of this nature can be made to yield very accurate and consistent results if all their conditions are carefully observed, but they are limited both in application and in significance, even should they be performed with a variety of bacteria instead of with *B. typhosus* alone. Some classes of disinfectant either act slowly or inhibit growth in high dilution without necessarily killing; with these the results obtained are quite misleading. Others, and especially those owing their activity to iodine, chlorine,

or oxygen, are effective in extreme dilution under the conditions of the test, when they encounter almost "naked" bacteria (the only organic matter present being that contained in 0.2 c.cm. of broth), but may be neutralized and rendered inert by the presence of other material such as a disinfectant encounters in practice. It remains to consider tests which take this factor into account.

### Tests of Excremental Disinfectants

A disinfectant in this class may be used for a typhoid stool, a cow-byre, or a railway truck, but wherever it goes it meets dirt, and that dirt often contains excrement. The notion that it should be tested on or in the presence of excreta is therefore natural, and, in fact, provided nearly thirty years ago a battle-ground on which Kenwood and Hewlett, Winter Blyth, and others[17 18 19 20] fought for a test incorporating faeces or other complex material such as urine or milk in the mixture to be disinfected, their main opponents being Sommerville and Walker,[21 22] who maintained that such materials are so inconstant in composition as to be unserviceable.

Two methods in present use are traceable to this controversy: the Admiralty test,[23] in which the organic matter is gelatin and starch, materials proposed by Sommerville and Walker; and the Chick-Martin test,[24] in which the organic matter is dried human faeces. Either of these additions reduces the activity of disinfectants which are highly susceptible to the influence of organic matter, but the Chick-Martin is much the more severe, and the origin and quantity of the organic matter used are both more appropriate. Unfortunately, the process of drying, sieving, and weighing faeces is both time-consuming and unpleasant, but it is not for this reason alone that the test has failed of general adoption; a greater objection is that workers with it have been unable to obtain consistent results. I have recently investigated the process of disinfection under the conditions of this test,[25] and found that its progress depends on a number of unsuspected factors, including the degree of subdivision of the faecal particles and the formation of a deposit protective to the few bacteria contained in it, which are incapable of exact control. Since this test is the only available one of its kind, and the use of disinfectants under certain statutes is governed by the results officially obtained with it, improvements in the method which would ensure greater accuracy are highly desirable. Although some improvement could probably be secured by minor modifications, my provisional suggestion is that the use of faeces should be discontinued altogether. Its strictly imitative character has doubtless much to commend it, but this advantage is more than counterbalanced by variability in composition. A suspension of yeast, however, is nearly constant, both in chemical composition, which is sufficiently complex, and in particle size, and does, in fact, similarly reduce the activity of disinfectants.

Whatever method ultimately secures approval for this purpose, it must be one in which complex organic matter, both particulate and in solution, is furnished in adequate amount to parallel the conditions obtaining in the reasonable use of disinfectants outside the body.

### The Testing of Surgical Disinfectants

It is often forgotten that disinfectants are used clinically in many different ways, in some of which their task is easy and in others manifestly impossible. Among the former are the sterilization of the intact skin or of a recently inflicted wound, in which bacteria are still on the surface of exposed tissue and not within it; among the latter are application to deeply infected tissues and such therapeutic optimism as attempting to kill bacteria in the blood stream. There is a world of difference here between prophylaxis and treatment, and few would be so bold as to suggest that any *in vitro* test can be a sufficient guide to the merits of disinfectants in the treatment of established infections, although its indications may nevertheless be of some value. But the conditions in prophylaxis are different, and tests incorporating such materials as blood, or serum and muscle extract, are distinctly applicable to the problem of the recent wound.

It is idle to discuss individual methods such as these, since every investigator has devised his own, and results are therefore quite incomparable. The essential feature of most is the addition to the test mixture of either serum or blood, in concentrations varying between 1 per cent. and 50 per cent., simply in order to determine how far these additions diminish bactericidal action. The ingenious "slide cell" method[26] goes further than this, since it also indicates the concentration in which the disinfectant interferes with phagocytosis.

It is really lamentable that there should be no universally recognized and reasonably appropriate test by which surgical disinfectants could at least be broadly classified as good, bad, and indifferent, and indeed awarded a numerical coefficient with a definite comparative significance. If necessary, its conditions could be varied somewhat with the class and type of action of the disinfectant concerned, each class having its own standard for comparison; thus, for example, phenol would serve for disinfectants of coal-tar origin and a mercury salt for compounds of the heavy metals. Such a test would employ one of the pyogenic cocci as the test organism, and preferably blood as organic matter. Its results would at least serve to show in what concentration, if any, a disinfectant is calculated to destroy bacteria during brief application to a recently inflicted wound.

There is the same lack of uniformity in methods of studying the disinfection of normal skin, the treated area being swabbed, scraped, or excised, and cultivated with or without sufficient dilution or neutralization in a variety of ways.[27 28 29 30] The capacity of disinfectants for penetrating tissue has been studied little; recorded methods are attempts to sterilize whole pieces of infected tissue,[31] histological demonstration in treated tissue,[32] and the treatment of infected blood clots.[33] Finally, there are methods, with which this paper is not concerned, of demonstrating prophylactic efficiency by animal experiment. These have been recently reviewed in these columns by Browning,[34] and their results indicate that bacteria freshly introduced into the body, under conditions exactly parallel to those of the recently inflicted wound in the human patient, can be destroyed by chemical means. In this important field standardization of methods is perhaps scarcely feasible.

### The Toxicity of Disinfectants

The possible efficiency of a disinfectant about the body is conditioned not only by its bactericidal activity but by its toxicity, which limits the concentration in which it can be used. There is no generally accepted method of determining this. Administration to animals may be either subcutaneous, oral, or intravenous: according to Hale,[35] who made an extensive study of coal-tar disinfectants from this point of view, the subcutaneous and oral routes give results in close agreement, and he adopted the former. Hewlett[36] makes the same claim for intraperitoneal injection. Methods not depending on lethal effect are the treatment of tissue cultures (Lambert,[37] Hata[38]) and the study of interference with phagocytosis (Browning *et al.*,[39] Bond[40]). A curious but perhaps not wholly fanciful suggestion is the immersion of earthworms in disinfectant solutions for varying periods (Winter Blyth[18]). It appears desirable that some method of administration to animals should be adopted generally as a yardstick by which toxicity may be judged.

### Discussion

This subject was reviewed in the Milroy Lectures of 1909 by Hewlett,[41] and a comparison of the position at that time with that of the present day reveals that it has altered singularly little in a quarter of a century. There were then two recognized tests, the Rideal-Walker and the Chick-Martin, each having a limited sphere of usefulness ; they exist to-day in forms which respectively are slightly modified and entirely unaltered. There was then no appropriate and recognized method of testing a surgical disinfectant ; there is none now. Disinfectants having multiplied during this period, the position is, if anything, more confusing than before, in spite of more extended study. It is, briefly, that significant comparative data on the practical action of certain classes of disinfectant are almost unobtainable, simply because there are no generally accepted terms in which to express them. A test yielding such information must take into account six variable factors, and unless investigators can be induced to standardize the conditions of their tests the isolated scraps of knowledge which they furnish cannot be co-ordinated.

In other spheres regulation of this sort has been an outstanding success. The control and standardization of therapeutic substances has made rapid progress, especially in this country, and if accepted methods of assay can be devised for vitamins, hormones, and drugs, they presumably can be for disinfectants. It is certainly desirable that they should be in the mere interests of truth, but if, as many believe, chemical sterilization is feasible in a variety of circumstances in which faulty methods at present fail to achieve it, then a valuable preventive weapon is capable of being brought into more effective use.


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# THE PROVISION FOR MAJOR SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS


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Institutional treatment has played a very prominent part in the management of cases of pulmonary tuberculosis for the last forty years. Sanatoria have been regarded as places for the treatment of phthisical patients whose prospect of recovery is good, but until recent years little or no provision has been made for the advanced case or for the one requiring prolonged rest in bed and careful nursing. Stress has been laid upon the point that advanced cases must not be mixed with early ones owing to the depressing influence of the former upon the latter, and a number of local authorities have established homes for the hopeless cases. These are generally unpopular with both the patients and the staff. It is often difficult to get the former to consent to admission and more difficult to persuade them to remain, while the staff dislike working in a place devoid of hope, with the patients slowly fading away and meanwhile producing a daily crop of grumbles because they have nothing else to do but think of their ills and brood over their misfortunes.

It naturally follows that quite a large proportion of cases with extensive disease find their way into sanatoria, partly owing to the complete absence of symptoms in the early stages of particular cases, partly owing to the desire to escape the home for the dying, and partly owing to the inadequate provision for cases which are not hopeless, but require prolonged rest before any hope of recovery can be entertained. Where this has occurred it is found that the bogy of depression caused by mixing advanced and early cases does not exist. The general cheerful atmosphere of the sanatorium is not affected by the increased number of bed patients, although the problem of providing the necessary suitable accommodation becomes very serious, and a constant trial to those in authority.

The division of tuberculosis institutions into two classes —one for the reception of early cases and one for the advanced cases—is impracticable, and does not produce the best results for the money expended. A better method is to segregate the patients according to the treatment they require rather than according to the extent of their lesions ; the sanatorium mainly providing routine treatment, special courses of chemotherapy, and the minor surgery of collapse therapy, while the tuberculosis hospital and a special department of the municipal hospital accommodate cases requiring major surgical treatment, observation, and prolonged rest in bed prior to a period of sanatorium treatment.

While the patient requires lengthy treatment in bed it is both unnecessary and uneconomical to send him far from home into the depth of the country, for bed cases require a large, well-trained staff, which are often not easy to obtain and keep in areas remote from towns. Also patients are much happier and more contented during the period they are confined to bed if they can be visited easily and regularly without great expense to their relatives. Observation cases, too, should be in hospitals where it is easy to obtain a full and complete examination of the patient with the assistance of the expert opinion of a radiologist, pathologist, and other specialists as occasions arise, along with the close co-operation of the tuberculosis officer or the physician primarily interested in the case.

### The Surgical Case

The important problem that has arisen by the extended application of major surgical treatment has to be faced by all those whose duty it is to provide treatment. This work demands the services of a surgeon with special experience, assisted by a trained staff fully conversant with the post-operative treatment and nursing of these particular cases. In order to give patients the full advantage of all the various forms of collapse therapy a specially equipped theatre and accessory rooms are essential, and necessitate great expenditure. Yet the actual percentage of cases in which major surgical treatment is possible is still very small. Extremely careful selection is most important for good results, and this selection can only be determined with the help of a modern *x*-ray plant and a pathological laboratory, where the staff can make the various examinations and tests which are becoming increasingly important.

After proper investigations have been made and all the pros and cons have been considered, it is doubtful if more than 2 per cent. of patients are suitable for major surgical treatment.

At the Brompton Hospital,[1] where cases are sent specially for major surgical treatment and where every facility exists for selecting cases, 1,280 cases of pulmonary tuberculosis during 1932 provided only forty-seven Stage I, forty-four Stage II, and five Stage III thoracoplasty operations, and six apicolyses. At Colindale Hospital, where all cases are carefully scrutinized for the possibility of surgical treatment, out of 752 admissions during 1933, only six thoracoplasties and three apicolyses were performed. These figures mean that approximately 98 per cent. of cases of pulmonary tuberculosis cannot be treated by thoracoplasty.

Every scheme for treatment of tuberculosis must aim at giving the best possible results in the most economical manner, and so the question immediately arises: Are all local authorities going to be involved in great expenditure so that 2 per cent. of their consumptive patients may receive the treatment necessary for their recovery, and, if so, where is this special treatment to be performed? It is only natural that a medical superintendent wishes to develop his institution so that he can follow his cases through to a successful end, and every local authority should be keen on being able to give to those under its care the advantages of modern treatment; but on the other hand it must be remembered that money can easily be wasted by isolated attempts at progress in small areas with insufficient material to justify the expenditure or to keep a special staff employed frequently enough to ensure good technique.

It is also reasonable that local authorities like to feel that they provide the necessary treatment for all types of cases within their area, and are not dependent upon the institutions of other organizations; but the tuberculosis problem is a national one, and all patients in all parts of the country should be able to obtain treatment from which they will derive the most benefit, and have the advantages of modern methods administered under good conditions.

### Defects of the Present System

With the above aim in view it can easily be seen that the problem of providing major surgical treatment such as thoracoplasty, apicolysis, and adhesion section is not an easy one for councils responsible for the care of the phthisical population. The treatment is essential for recovery in a very small percentage of cases. As already pointed out, it must be carried out by a surgeon skilled in the practice of thoracic surgery, it requires special equipment and a good operating theatre adequately staffed, and also a competent staff with modern apparatus and necessary facilities for selecting the patients and deciding that they are suitable for such special treatment. Furthermore, thoracic operations usually have to be done in stages, between which complications may arise, so that the services of the surgeon cannot be dispensed with immediately the one operation is performed, but are required for a number of weeks for each case.

It is therefore better for all concerned that the patient is near to the surgeon throughout the operation period. This usually means in a hospital near or in the large town in which the surgeon resides, which, incidentally, is generally more accessible for the visiting of most patients by their relatives, a factor which may be of great comfort to both. For these reasons it appears that unless the medical superintendent or one of his resident staff is qualified to carry out major operations and is experienced in thoracic surgery, the sanatorium situated in the country is *not* the best place for this treatment to be carried out. Even if there is a capable resident surgeon—unless he has a reputation which causes patients to be sent to the particular institution for the special treatment—it is doubtful if he will obtain sufficient practice to improve his technique.

Furthermore, the small number of cases for major operative treatment means a very considerable increase in the upkeep of the sanatorium, for a unit for thoracic surgery means an increase in the nursing staff beyond the ordinary needs of the place. When one considers that this increase of highly trained staff has to be carried continuously for the benefit of so few patients the scheme is obviously uneconomical, and not the best that can be devised for the patient. All those who have experienced the difficulties of persuading patients to submit to thoracoplasties will appreciate that the hopeful environment of a sanatorium, with its stimulating routine, encouraging the patients to look forward to a future of useful activity, does not fit in with drastic treatment by extensive operative measures. It is difficult for the selected patient to realize the necessity for such intervention when he appears to himself to be progressing favourably. In a hospital it is very different. Here the whole atmosphere leads him to think that his disease is serious. Not that the place is depressing, but the greater number of bed cases, the more frequent use of the operating theatre, and the greater frequency of all types of special treatments in the wards naturally cause a state of mind more amenable to consenting to major surgical treatment.

### Essentials of a Surgical Unit

Enough has been said to show that a centre for thoracic surgery should be kept busy; therefore it must serve a large area. It must be accessible and possess a surgeon specialized in the work. To comply with such conditions in provincial districts three or four counties must arrange to send their cases to a hospital, properly staffed and equipped, in or near to a large town conveniently situated for the area. Large municipal boroughs will have sufficient cases to justify setting aside part of their general hospital for the work. After operative treatment has been completed the sanatorium in the country is the ideal place for the patient to recuperate.

The memorandum submitted to the Ministry of Health Departmental Committee by the Society of Medical Officers of Health in July, 1934,[2] stated that, as regards institutions for the residential treatment of tuberculosis,

"in modern construction, equipment, and treatment, there is no definable difference in principle between a small and a large institution. . . . Modern tuberculosis institutions, whether called sanatoria or hospitals, approximate closely to

the standard set by general hospitals because of recent developments in diagnosis and treatment; hence the need for providing complete facilities as regards equipment, staffing, and accommodation for carrying out these developments."

Does this mean that every tuberculosis institution, regardless of the type of case admitted, and regardless of the number of beds, be it fifty or 300, must have a fully equipped and adequately staffed operating theatre, *x*-ray room, and pathological laboratory costing many thousands of pounds? It is hardly possible that such lavish expenditure can be desired, yet if there is no distinction between the function of the tuberculosis hospital and the sanatorium then that must be the case. The whole idea of turning the country sanatorium into a hospital is difficult and costly, otherwise we should long ago have built all large hospitals in the country and discarded with the use of convalescent homes. Every town-dweller benefits from treatment in the country, whatever may be his disability, but it is quite unnecessary to transport him into the wilds to perform operative treatment, even if he is suffering from pulmonary tuberculosis.

On this recommendation every sanatorium would be saddled with the upkeep of a surgical unit for one or two major operations each year, which would be not only bad for the patient, owing to the lack of experience of the staff, but also a serious burden on the local authority responsible for the upkeep of the institution.

### Extensive Field of Thoracic Surgery

Moreover, nobody at present can foretell the future of plastic surgery in the treatment of tuberculosis. It is still in the experimental stage. Even now the surgeons differ widely in their technique when doing a thoracoplasty, and there is considerable doubt as to the efficacy of apicolysis. Phrenic evulsion has been condemned very definitely by some distinguished thoracic surgeons, and adhesion section can produce very alarming and distressing complications.

Although some form of collapse therapy is desirable in many cases, we must proceed very cautiously when an artificial pneumothorax fails to give the desired result. Collapsing the diseased lung is a valuable mechanical process that assists the patient towards recovery, but however perfect the treatment may be, we still have to rely upon the reaction of the body tissues towards the toxic processes of the infection, and we shall not be able to claim a cure for the disease until we are able, by biological or biochemical methods, to build up with certainty the patient's resistance, and desensitize him against further activity of the bacillus.

Up to the present, tuberculosis hospitals and sanatoria have been kept specifically for the treatment of one particular (pulmonary) disease. The fear of infection has prevented any cases except those with definite tuberculous lung lesions being admitted. Surely we can take a broader view of respiratory diseases now that we are able to control the wanderings of the bacillus so effectively. Already many general hospitals have tuberculosis wards, and the tuberculosis physician and the thoracic surgeons do not confine their energies entirely to the treatment of tuberculous patients, for a thorough knowledge of the pathology, diagnosis, and treatment of pulmonary tuberculosis ensures a familiarity with the details of other chest conditions. No thoracic surgeon would be content to operate merely on tuberculous cases, and a hospital equipped for all forms of operative treatment and examination of tuberculous cases is equally capable of providing facilities for lobectomy or bronchoscopy and implantation of radium without much additional expenditure.

### The Proposed "Chest Hospital"

The vision of the future, therefore, brings before us the establishment of hospitals and sanatoria for diseases of the chest—the hospitals situated near large towns and capable of dealing with all chronic diseases of the lungs, the sanatoria in the country doing minor surgery and receiving the cases from the hospitals to convalesce after major operative treatment. Just as a municipal or county sanatorium to-day serves a specified area, so the hospital would receive cases from a certain area large enough to make it an economical unit. The tuberculosis officer would become a chest specialist working in close co-operation with the medical superintendent of the chest hospital, and also controlling treatment centres for artificial pneumothorax cases requiring refills—a need which demands urgent attention—the provision for artificial pneumothorax treatment, particularly the continuation of it after leaving the sanatorium, being grossly inadequate in many parts of the country.

By this scheme the present limited future of the tuberculosis worker would be eliminated. The practice would be more attractive, because of the wider scope and better prospects afforded by the greater variation of the cases. The patient would also obtain a certain degree of satisfaction by being sent to a chest hospital instead of having to bear the ordeal, with all its unpleasant associations, of being sent to a tuberculosis institution.

Let us apply the same title as that given to the Brompton Hospital to our tuberculosis hospitals and sanatoria, and add to them the function of treating diseases of the chest. The respiratory system is a distinct and important part of the body, and those who are able to treat one of its pathological conditions are equally able to treat any other, to the benefit of all concerned.

The tuberculosis dispensary would be converted into a chest clinic completely equipped for diagnosing diseases of the respiratory system and for providing out-patient treatment for patients discharged from the hospitals and sanatoria. The need throughout the country for chest clinics constructed on the lines laid down by Ellman[3] is far more desirable than a large number of centres for thoracic surgery in remote sanatoria in the country. The progress of anti-tuberculosis work is being hindered by the poor facilities for the diagnosis of tuberculosis at many dispensaries, and the results of artificial pneumothorax treatment are not favoured by the difficulties patients experience in being compelled to travel long distances to attend for their refills, which are not infrequently done in the out-patient departments of hospitals by junior house-physicians who have not had the necessary experience to appreciate important details so essential for a successful result. The elimination of these undesirable conditions should be the first call upon public expenditure devoted to the fight against tuberculosis.

The development of chest hospitals and clinics for the diagnosis and treatment of chronic diseases of the respiratory system would have a further advantage in providing centres for student and post-graduate education in a comprehensive, economical, and convenient manner. The average medical student still finds it difficult to obtain a well-balanced knowledge of chronic pulmonary conditions. He finds a few cases here, and a few cases there, treated by different physicians in different hospitals, and unless he attends a tuberculosis clinic he is apt to miss phthisical cases completely. So his ideas become scrappy and disconnected, with a restricted vision of the fundamentals of thoracic diseases. The chest hospitals and clinics and the special wards in the general hospital would, by their accessibility and proximity to the medical school, become centres of training in all methods of diagnosis and treatment.

### Conclusion

The results of thoracic surgery are most encouraging and the work must be supported, but there is no need to be carried away in our enthusiasm to provide surplus possibilities for the treatment of one case while there are not adequate facilities for treatment of the ninety-nine others.

In conclusion, I wish to state that the above views are my own personal opinions, and have no bearing on, or connexion with, the scheme or work of any public authority, and that I have brought them forward merely with a view to promote discussion on what I consider an interesting and important problem.

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## A REVIEW OF ONE HUNDRED CONSECUTIVE GALL-BLADDER OPERATIONS

BY

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The cases under review have all been operated on by the writer, and sufficient time has elapsed since operation to enable one to judge from a clinical standpoint the success or otherwise of the operative procedure.

In Table I the cases have been divided into four groups. Included in the first group are cases of empyema of the gall-bladder and tension gangrene of the gall-bladder, so that the term "acute" denotes the urgency of the condition rather than its duration, since many of the acute cases were associated with, or superimposed on, a chronic condition. The other three groups are self-explanatory.

TABLE I

| Type | No. of Cases | Sex | | No. of Deaths |
|---|---|---|---|---|
| | | Male | Female | |
| 1. Acute ... ... ... ... | 14 | 5 | 9 | 3 |
| 2. Chronic cholecystitis with stones | 50 | 4 | 46 | 6 |
| 3. Chronic cholecystitis without stones | 34 | 6 | 28 | 0 |
| 4. Carcinoma of gall-bladder ... | 2 | 1 | 1 | 1 |
| Totals ... ... ... ... | 100 | 16 | 84 | 10 |

### Sex Incidence, Age, and Habitus of Patient

In this series 84 per cent. of the patients were females, and of these fifty-three had borne children. This corresponds with what is generally known. The average age of the eighty-four female patients was 49 years, while that of the sixteen males was 52 years. Of the whole series forty-six of the patients were of the asthenic type of bodily habitus, and fifty-four of the sthenic type.

### Symptoms and Associated Lesions

In eighty-five of the cases there was a history of flatulent indigestion; thirty-three cases had suffered from attacks of biliary colic; and in thirty-one of the cases jaundice had been present either at the time of treatment or on some previous occasion. Fifteen of the patients had definite symptoms or signs of "cholecystitic heart"—namely, dyspnoea on exertion, cyanosis, oedema of the ankles, or bronchitis. Four cases suffered from attacks of bronchial asthma. Pyelitis was an accompaniment in sixteen of the cases, and was due to *B. coli* in every instance. Duodenal ulcer was present in addition to the gall-bladder lesion in four cases. Chronic appendicitis was present in ten instances, and in one case hour-glass stomach accompanied the gall-bladder infection.

### Type of Operation and Percentage Mortality

Cholecystostomy was performed in the fourteen acute cases; in the two cases of carcinoma of the gall-bladder cholecystectomy was the operation carried out; and in the eighty-four chronic cases the choice of operation performed is shown in Table II.

TABLE II

| Type of Operation | No. of Cases | No. of Deaths |
|---|---|---|
| 1. Cholecystectomy ... ... ... | 56 | 4 |
| 2. Cholecystectomy with drainage of the common bile duct | 3 | 1 |
| 3. Cholecystostomy ... ... ... | 25 | 1 |
| Totals ... ... ... ... ... | 84 | 6 |

In the acute cases there were three deaths out of fourteen, a mortality of 21 per cent. The cause of death in two cases was peritonitis, and in the third myocarditis. All three patients were over 68 years old. In the eighty-four chronic cases the mortality rate was 7 per cent. In two cases the cause of death was a technical error—namely, ligation of a crushed cystic duct with necrosis at the site of the ligature and extravasation of bile into the peritoneal cavity on the eighth and tenth days after operation respectively. Pulmonary embolus accounted for another fatality, and subphrenic abscess for a fourth. The remaining two deaths occurred in patients over 70 years of age, and were due to myocarditis and bronchitis respectively.

### Pathology and Late Results in the Chronic Cases

In fifty of the eighty-four chronic cases stones were present, and in these the gall-bladder, if removed, was not examined microscopically, stone formation being sufficient evidence of a diseased organ. In the remaining thirty-four cases in which the gall-bladder was removed histological examination was carried out, and the results are tabulated below.

TABLE III

| | | |
|---|---|---|
| Gall-stones | single ... ... ... ... | 13 Cases |
| | multiple ... ... ... ... | 37 „ |
| | | 50 |
| Chronic cholecystitis ... ... ... ... | | 22 Cases |
| Cholesterosis and fibrosis ... ... ... | | 12 „ |

Associated liver changes were noted at the time of operation in forty-six cases. The liver showed "whitening" in the region of the gall-bladder, and this discoloration was of value in determining cholecystectomy when the gall-bladder did not appear to be grossly diseased to naked-eye inspection. (E. S. Judd, writing in the *Mayo Clinic Collection* of 1930, states: "Hepatitis may occur as a primary condition, and the symptoms which result from it are similar to those of cholecystitis. Furthermore, removal of the gall-bladder in these cases of primary hepatitis will relieve the symptoms.")

There is still a difference of opinion regarding the effects on the health of the patient of removal of the gall-bladder. This review was undertaken with the aim of finding out the late clinical after-results of cholecystectomy as compared with those after cholecystostomy. The recurrence of previous symptoms, the onset of new

symptoms following operation, and the general health of the subject at a period at least three years after the operation were investigated, and the results are shown in Table IV.

TABLE IV

| No. of Cases | Type of Operation | Health Satisfactory | Required Further Operation | Still Have Symptoms | Not Accounted For |
|---|---|---|---|---|---|
| 59 | Cholecystectomy | 51 (86.4 %) | 1 (1.8 %) | 2 (3.3 %) | 5 (8.4 %) |
| 25 | Cholecystostomy | 10 (40 %) | 6 (24 %) | 7 (28 %) | 2 (8 %) |

The case requiring further operation after cholecystectomy is of interest, and a similar condition following cholecystectomy has been observed and reported on by Judd and White in the Mayo Clinic publication of 1928.

In my case, at the first operation, a thick-walled gall-bladder, containing stones, was removed; no stones were palpated in the common bile duct, which was not opened. Four months later the patient, a stout female of 54 years, had recurrence of severe attacks of pain with jaundice. It was surmised that she must have a stone in the common duct. At the second operation the common duct was opened and no stone was present, but the pancreas was hard, nodular, and enlarged. Drainage of the common duct was carried out by means of a Deaver's T-tube for about six weeks, her jaundice and pain disappeared, and she has now been free of symptoms for two years.

Of the 24 per cent. of cases requiring further operation after cholecystostomy five had stones in the gall-bladder at the second operation, and one developed acute pancreatitis, requiring redrainage of the gall-bladder.

### Summary

Up till the time of Wilkie's experimental work there was room for performing cholecystostomy in the belief that drainage might cure the condition of the gall-bladder. With the realization that the gall-bladder infection is intramural this operation is now reserved for acute cases. C. H. Mayo states: "It may be wise to preserve and drain the gall-bladder in cases of acute illness." A further indication for cholecystostomy may be the presence of thickening and enlargement of the pancreas where prolonged drainage of the gall-bladder is necessary.

Judging from the clinical results in this small series one has no hesitation in concluding that cholecystectomy is the operation of choice.

The report for 1933 of the Malaria Advisory Board, published as a supplement to the *Federated Malay States Government Gazette*, announces the issue of an up-to-date guide to the identification of anopheline adults and larvae. It is stated also that bamboo subsoil drainage had been tried for breeding-places in seepages from a banked-up pool. The bamboos were laid in a semi-green condition, and it was expected that they would last from two to three years, but even if they had had to be replaced yearly the cost of this would have been less than that of oiling. It is suggested that this method should therefore be particularly useful in the more remote places, where the skilled supervision required for oiling is not available. In view of the present financial difficulties more economical means of oiling had been carefully discussed, but where only a minimum of oil is used grave danger is to be anticipated unless constant, skilled, and intimate supervision is supplied. A modification of Dr. W. T. Quaife's brush method is being used throughout the Kuala Lumpur oiling area. This method is said to have the following advantages over ten-day oiling and older methods: equal or increased safety; much lower cost; thorough mixing of oil, water, and larvae; drains automatically swept clear of obstructions; and minimum damage done to the sides. An investigation showed that antimalarial oiling presented no particular danger to poultry.

# PREVENTIVE IMMUNIZATION IN AN INSTITUTIONAL EPIDEMIC OF SCARLET FEVER

BY

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During the early part of 1934 an outbreak of scarlet fever occurred at the Bracebridge Mental Hospital affecting the female patients and nursing staff. The fever was of an unusually mild type, but none the less serious from the point of view of complications and infectivity. The first case, that of a nurse, occurred on January 27th, and during the ensuing six weeks sixteen other nurses and twenty-six patients contracted the disease. During the same period there were also twelve cases of septic tonsillitis and numerous others of a follicular type.

### Type of Case and Complications

The majority of cases were generally atypical in character, the temperature seldom rising above 100° F., though the pulse rate was comparatively high; circumoral pallor was rarely seen, the tongue was only lightly coated, and palatine spots were absent. The rash was typical but usually transient, and was followed by normal desquamation. There was little constitutional disturbance, and of the thirty-one cases treated here only four developed any albuminuria (eleven nurses were treated by the public health authorities). So mild was the usual case that we should often have hesitated to diagnose scarlet fever had we not known that such a type was prevalent in the neighbourhood.

Otitis media occurred in two cases, multiple arthritis in seven, and bronchopneumonia in one case, which was fatal in a patient aged 71. Nephritis was not a complication in any case.

TABLE I.—*Showing Age Incidence*

| | Up to 20 | 21 to 25 | 26 to 30 | 31 to 35 | 36 to 40 | 41 to 45 | 46 to 50 | 50 and Over | Total |
|---|---|---|---|---|---|---|---|---|---|
| Female patients | 2 | 3 | 1 | 2 | 4 | 5 | 4 | 5 | 26 |
| Female nurses .. | 6 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 17 |

It will be observed that fourteen of the twenty-six patients affected were over the age of 40, two being 71 and 76 respectively, but it must be remembered that the average age of the patient population is comparatively high.

### Preventive Measures

Cases were isolated as soon as diagnosed, but in an institution with 200 staff and 1,350 patients, many of whom are employed in different parts of the building, isolation of all contacts was found impracticable. It was decided, therefore, to immunize all susceptibles as demonstrated by the Dick test, the test being applied to the whole female staff and to all direct patient contacts. In order to save valuable time, however, ninety-two patients working in the kitchen and laundry were immunized without preliminary testing.

Immunization was effected by giving a course of four weekly intramuscular injections of scarlet fever prophylactic toxin (Burroughs Wellcome and Co.). This method was used in preference to the injection of one massive

dose of toxin, first, to prevent confusion between mild attacks of scarlet fever and the reaction to toxin, and secondly, to prevent the incapacitation of a large number of staff and patients at one time.

TABLE II.—*Dick Test for Susceptibility, showing Age Groups*

| | Up to 20 | 21–25 | 25–30 | 31–35 | 36–40 | 41–45 | 46–50 | Over 50 | Total |
|---|---|---|---|---|---|---|---|---|---|
| Patients: | | | | | | | | | |
| Number Dick-tested ... | 10 | 8 | 13 | 27 | 24 | 27 | 32 | 116 | 257 |
| Number with positive reaction | 1 | 3 | 5 | 6 | 4 | 4 | 4 | 8 | 35 or 13 % |
| Nurses: | | | | | | | | | |
| Number Dick-tested ... | 14 | 56 | 27 | 14 | 1 | 8 | — | — | 120 |
| Number with positive reaction | 7 | 20 | 7 | 5 | 0 | 0 | — | — | 39 or 32.5 % |

To minimize the risk of infection being carried to the male side, ninety attendants were Dick-tested, and eighteen giving positive reactions were immunized. Thus the susceptibility of the male staff was 20 per cent.

As expected, there was a much larger percentage of susceptibles among the staff, many of whom are under 30, than among the patients, but the comparatively high incidence of susceptibility in the elderly patients is to be noted. This was also borne out in the number of patients over 40 who developed the disease. No patient, and only one nurse, with a negative Dick reaction developed scarlet fever, but two patients and three nurses with positive reactions took the infection before they could be immunized. The cases of tonsillitis gave a Dick-negative reaction. Of the total (178) who received the full course of immunization none developed scarlet fever.

### Conclusions

1. There was a coexisting and apparently aetiologically connected outbreak of tonsillitis, but these patients gave a Dick-negative reaction.

2. Although the infection was of a mild type the infectivity and tendency to subsequent complications (apart from nephritis) were in no way diminished.

3. The susceptibility to scarlet fever remains comparatively high among the elderly patient population of a mental hospital.

4. The method of immunizing by four weekly doses of prophylactic toxin can be carried out without discomfort or disability to the patients.

5. No further cases having arisen during the last six months, we are satisfied that an epidemic, such as has been described, can be rapidly and effectively controlled by the active immunization of all susceptibles, as shown by the Dick test.

We wish to thank Dr. John Macarthur, medical superintendent of Bracebridge Mental Hospital, for permission to publish these notes, and for the assistance he has at all times afforded us.

J. Berendes, writing in the *Münchener medizinische Wochenschrift* of November 15th, 1934, states that in tuberculosis of the skin and mucous membranes (as proved by Matzenauer for lupus) the Wassermann reaction is not seldom positive. Another source of confusion is the coexistence of lung tuberculosis with naso-oral syphilis, or possibly (but apparently much less commonly) with laryngeal syphilis. A third source is the fact—possibly explicable by the richness of the mucosa of the upper air passages in lymphatic tissue—that histological examination of biopsy specimens from syphilitic oral, nasal, or laryngeal lesions not infrequently shows the presence of epithelioid-cell tubercles and Langhans's giant cells, and leads to a confident diagnosis of tubercle. In illustration of the last point Berendes records four cases with microscopic characters of tubercle in ulcers of mouth, nose, tonsils, and larynx: the Wassermann reaction was positive and the response to anti-syphilitic therapy was well marked.

## A NOTE ON SO-CALLED ACIDOSIS IN CHILDHOOD

BY

R. A. MURRAY SCOTT, M.A., M.B., B.Ch.

Attention was recently drawn (*British Medical Journal*, October 27th) by Dr. K. H. Tallerman to recurrent attacks of vomiting in childhood. He emphasized their importance by pointing out their repeated interference with school life, and noted that these children are often said to be suffering from attacks of acidosis. In an investigation of forty cases he attempted to find some allergic causal factor and failed. He discovered that on a diet with increased carbohydrate and reduced fat they progressed more satisfactorily. He held out hopes for their future, but gave no basis for his hopes.

### Survey of Cases

The following brief analysis of twenty-three children with similar symptoms is prompted by Dr. Tallerman's discussion. Each of these children was brought to the writer's notice with a diagnosis of acidosis already made by another medical man in whose neighbourhood the child had previously lived. Their symptoms—to be enumerated later—were similar to those of Dr. Tallerman's series, and it is interesting to note that every one of the twenty-three cases had an infection in the throat or nose or maxillary antra, and that after operation twenty are apparently cured. One has refused operation; one still has mild attacks when she gets cold, and one is still subject to feverish attacks. These cases have been seen within the last five years. Their ages vary from 4 to 13 years, the average being 7½. Of the twenty-three thirteen are girls and ten are boys.

*Frequency of Attacks.*—This was variable—from once a year to twice a week—though in no case was there any definite period between attacks. The frequency with which the attacks occurred at the week-ends was remarkable.

*Exciting Cause.*—The parents in several cases put down the exciting cause as chill after school games or overeating, but it is impossible to give any information of value on this subject. In six cases the mother had warning of an incipient attack by the assumption of a voracious appetite on the child's part. In a further six cases constipation preceded the attack. Constipation was a very regular finding after the acute stage of the attack was over. It occurred in seventeen of the twenty-three cases.

### The Attack

Suddenness of onset was a striking feature of the attack. The child might go to school apparently well and be sent home in the middle of the morning. The commonest onset was with headache, fever, vomiting. The headache was frontal or behind the eyes, and occurred in twenty cases. The fever varied from a slight rise to over 104° F. (over 101° in ten cases, and over 104° in two cases). It rarely lasted more than two days. Vomiting occurred in twenty cases. One case had vomiting without headache, and one case headache without vomiting. Three cases had migrainous headaches with visual phenomena. The tongue generally became furred, often thickly coated. The breath was offensive. In seventeen cases Gerhardt's ferric chloride test for diacetic acid was done during one or more of the attacks and was in each instance positive. Many urines were examined between attacks, and diacetic acid was never found. The acute part of the attack lasted about two days, and convalescence varied from two days to a fortnight. Two cases showed unusual symptoms—namely, joint pains—during the attacks. Another had a cough with mild bronchitis. One complained of sore throat and difficulty in swallowing.

### Diagnosis

Each child was seen in at least one attack. Ten children had enlarged tonsils and adenoids, which became inflamed and swelled during the attacks, and subsided only a little between-times. Eight had tonsils which seemed almost a negligible quantity between attacks and enlarged during the attacks. None of these had any gross adenoid enlargement, which suggests that post-nasal discharge from infected adenoids may be the cause of keeping the tonsils enlarged between the attacks. One had adenoids and no tonsillar enlargement. All the tonsil cases had enlarged tonsillar glands during the attacks, and in only a few cases did they subside between-times. Two had adenoids and maxillary sinusitis. Two had hypertrophic pharyngitis during the attacks. One settled between-times, the other remained. The latter was the one with chest symptoms. His tonsils and adenoids had already been removed. His attacks lasted about fourteen days, and, though sudden in onset, were mild. There was headache, no vomiting, a temperature a little over 99°, crepitations at both bases, and a mild rhinitis. His chief claim to inclusion in this list is that he was diagnosed as a case of acidosis by his previous medical attendant.

### Treatment and Progress

All but one of the tonsil group of children in the series have been operated upon. This one refused operation. She continues to have attacks. She has been put on a diet low in fat and high in carbohydrate and made to douche her nose regularly, and her attacks are less frequent. All the operation cases seem to be cured. The most recent operation was six months ago. One of these has a mild headache and occasionally vomits when she gets a cold. She has had two of these attacks in the three years since her operation ; she had about eight a year before this, and they were very severe. The case with adenoids alone and the two with sinus infection were operated upon and seem to be cured. One of the two pharyngitis cases has already been dealt with. The other was treated with nasal douching and nasal drops of ephedrine in liquid paraffin. She has had one attack in two years. She was a case of " pink disease," from which she recovered three years ago. Operation was suggested and refused. The subsequent progress seems to have justified the refusal. Another eight cases of recurrent vomiting have been seen during this time, all of which recovered after tonsillectomy, but as they were not previously diagnosed as acidosis they do not come into this list. It is interesting to note that of all this list of children with inflamed tonsils and adenoids, only one complained of sore throat, so that one is almost justified in calling this type of enlarged tonsil a painless tonsillitis.

### Summary and Conclusion

Twenty-three cases of so-called acidosis have been examined. All have been found to have some naso-pharyngeal infection. The results of treating the infection have been uniformly satisfactory in abolishing the " acidosis." It is concluded that infection in the naso-pharynx is a common cause of recurrent attacks of fever in children.

# Clinical Memoranda

## DOUBLE PLACENTA PRAEVIA (BINOVULAR TWINS) AND PRE-NATAL DIAGNOSIS OF CONGENITAL HEART IN SUCCESSIVE LABOURS

I was interested to read in the *Journal* of October 20th, 1934, of a case in which a pre-natal diagnosis of congenital heart disease had been made by Dr. A. W. Johns of Erith, and also in your issue of July 29th, 1933, of a case of placenta praevia with twin pregnancy, described by Dr. J. Stanley Coleman. I have had the unusual experience of having met with both these anomalies in the same patient in successive pregnancies. They were reported in the *Nova Scotia Medical Bulletin* for August, 1933. A short description is given below.

### BINOVULAR TWINS, DOUBLE PLACENTA PRAEVIA

Mrs. W. B., aged 41, 9-para. Patient seen in consultation with Dr. W. P. Mackasey at Grace Hospital, August 25th, 1923. Her pregnancy was estimated to be practically at term. There was a history of some " spotting " for the preceding two weeks, and rather free bleeding had started twenty-four hours before her admission. Her general condition, however, was still quite good. The pulse rate was 88, and her colour was not at all bad. Rectal examination revealed the presence of a central placenta praevia, with commencing dilatation of the os. The usual abdominal examination was not done. Caesarean section was advised and carried out by the classical method. On opening the uterus binovular twins were found, with double placenta praevia. One placenta was central with the edge of the other coming down to meet it. The twins (both male) weighed 5 lb. and 4 lb. 10 oz. Both were in good condition, and did well. The mother had a satisfactory and afebrile convalescence. She was discharged on September 8th.

### PRE-NATAL DIAGNOSIS OF CONGENITAL HEART-BLOCK

The same patient was readmitted at 6 p.m. on December 29th, 1925. She was in labour when admitted, the pains having started at 3 p.m. that day. The membranes had not ruptured. She had not reported to the clinic for pre-natal examination. The history of the pregnancy was not suggestive of any abnormality. On examination the foetus was found to be presenting by the vertex in the right occipito-anterior position. On listening to the foetal heart it was found to be irregular in an unusual way. After from four to eight regular beats a prolonged pause was to be noted. This pause was so long and so definite that it strongly suggested a condition of heart-block. A student who was present, and who had never previously listened to a foetal heart, was able to note the dropped beat. Labour was terminated by a low forceps delivery at 11.18 p.m. The child when born was not quite the ordinary " blue baby." The colour might better be described as " prune." The face was congested, the eyes were slanting, prominent, and turgid-looking. The muscle tone was poor. The weight was not taken until three days later, when it was 4 lb. 13 oz. The foetal heart auscultated immediately after birth, and revealed the same odd irregularity. The following morning Dr. K. A. MacKenzie (professor of medicine, Dalhousie University Medical School) saw the baby in consultation and made a definite diagnosis of congenital heart-block. The progress in hospital was fairly satisfactory. On discharge (January 11th) the infant's weight was 5 lb. 3 oz. The turgid appearance of the face and eyes was still present, and the heart irregularity was still to be noted. In early June, 1926, Dr. L. M. Murray of Toronto, cardiologist, was visiting Halifax, and expressed a desire to see the child, which was arranged. It was found in practically a dying condition, extremely wasted, pale, with very rapid and laboured respirations, and a history of vomiting. Dr. Murray confirmed the previous diagnosis. Death occurred within a few days after his visit. Permission was obtained for a necropsy, and the heart was removed for careful examination. This specimen is preserved in the museum of the Pathological Institute.

The pathological report by Dr. R. P. Smith, professor of pathology, Dalhousie University, reads as follows:

" The heart was received from Dr. Maclellan with the pericardial covering intact. It is enlarged to some extent from hypertrophy of the right auricle and ventricle—especially the latter—and shows a communication between both auricles (patent foramen ovale). The foramen has an oval

shape with rounded edges when viewed from the right side, and measures 3/8 inch by 1/8 inch. On the left side the usual overhanging flap-like valvular arrangement with crescentic margin is present. The valves and chambers are otherwise normal, as well as the pulmonary vessels and aorta. There is no pulmonary stenosis, but attached to the pulmonary artery are the remains of the stenosed and obliterated ductus arteriosus. No other deficiency in the interauricular septum, the pars membranacea, or interventricular septum can be detected.

Dr. Smith adds: "The interesting feature in this case is the presence of a condition of partial heart-block, which was recognized both ante-natally and post-natally, indicating some interference with the conducting mechanism of the heart. From the history this would appear to be due to some congenital deficiency or malformation of the auriculo-ventricular bundle (bundle of His), as this lies in close proximity to the opening of the foramen ovale, with interference of propagate impulses transmitted to it from the sino-auricular and auriculo-ventricular nodes respectively. In consequence of maldevelopment of the conducting fibres, an intermittent stoppage of impulses and a condition of partial heart-block would ensue. As far as I am aware no similar case of congenital heart has been recorded ante-natally and subsequently confirmed by post-mortem. It is possible that the foramen ovale is only another manifestation of a congenital abnormality in this case, and is not associated directly with the condition of the bundle of His."

In the *American Journal of Obstetrics and Gynecology* for January, 1934, two cases of congenital heart disease diagnosed ante-natally are reported by Dr. A. L. Dippel of Baltimore. In his article the author refers to similar cases previously reported in the literature, the first of which he has record having been made by Massman of Berlin in 1854.

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## BACKWARD DISLOCATION OF THE ELBOW

I think the following case is of some interest, as I do not know of any player whose courage and persistence have been rewarded in so short a time by successful trial in in a rough-and-tumble game.

The patient had been playing for the Varsity "rugger" side in recent matches, but was unnecessarily roughly handled with some kind of a jiu-jitsu "lock" on November 12th, 1934, and by this leverage the elbow was completely dislocated backwards. I was called to see him shortly afterwards and found him in great pain, with the usual deformity. Morphine (grain 1/4) was given at once, and the dislocation reduced under gas anaesthesia about half an hour afterwards. After the injury $1\frac{3}{4}$ inches of swelling appeared in both arm and forearm. *X*-ray examination showed no fracture. The patient was in bed suffering from shock and great pain for forty-eight hours, after which he left the nursing home and began walking exercise and movements of the wrist and shoulder joints. Massage had been instituted twice daily after forty hours, for the swollen arm and forearm, and active movements encouraged so far as possible, but *no passive movements allowed*. Radiant heat was also given at each séance. Daily surging faradism to muscles. On the fourth day the patient was tried with a rugger ball, and made to use it for the purpose of exercising both arms in unison, thereby regaining tactile skill with his fingers and using the whole limb in all directions. This form of treatment was gradually extended, and on the seventh day he was running and passing with the other players on the University ground.

All the swelling rapidly disappeared under this regime, and he was put on graduated exercises such as "press-ups," "handing-off" against a solid wall; and he played squash daily. On the eighteenth day he engaged in tackling practice; on the nineteenth he played for the University, and did sufficiently well to be awarded his "Blue" (December 1st). He appeared against Oxford with success on December 11th at Twickenham.

Cambridge. R. SALISBURY WOODS, M.D., F.R.C.S.

# Reviews

## OPERATIVE SURGERY

A comparison of the second edition of (Carson's) *Modern Operative Surgery*[1] with the first edition, which was published just ten years ago, affords an excellent opportunity of appreciating the changes that have occurred in surgical outlook and technique during the decade. That these changes are by no means insignificant is shown by the fact that it has been necessary to rewrite practically every chapter in the book, while two entirely new chapters have been demanded by the development of sympathetic surgery and of radium therapy. The former, by Mr. Jefferson, gives a very well-balanced account not only of the surgical technique of the various "sympathectomies" but also of the essential anatomy of the system and of the pre-operative tests which are of such importance in this branch of surgery. The chapter on radium therapy by Mr. Keynes contains a description of the main principles underlying surgical irradiation with gamma rays, and supplements the sporadic references to its use in special situations found in other chapters.

A further new section is the appendix on cleft palate, in which an account is given of some of the newer methods designed to overcome the difficulty of approximation of the palate to the pharynx. This also is supplementary to the description in the chapter on plastic surgery by Gillies of the author's own method of dealing with the condition. We note that this chapter now includes a section on "cosmetic reduction operations," especially for the breast, and of the treatment by plastic methods of the skin lesions produced by radium and *x* rays. It would, however, be impossible to detail here all the newer work which has been included in this edition; wherever tested the book will be found to maintain the standards set when it first appeared, and to give an authoritative survey of modern surgical methods.

This second edition is dedicated to the memory of Herbert William Carson, the editor of the original work, whose untimely death left the arrangements for the new issue in active preparation. Professor GREY TURNER, already a contributor to the previous edition, has undertaken the editorship with great success, and in addition has revised many of the sections written by the late editor and that on vascular surgery by the late Hamilton Drummond. Other than the above changes, and the revision of the chapter on thoracic surgery by Mr. J. E. H. Roberts, the contributors remain the same. The illustrations are good, and several new ones of equal merit have been added in this edition. The paper, while taking the illustrations well, is not too glossy, and the typographical errors are surprisingly few for a book of this size.

## LEAD POISONING

Any literary contribution by Dr. ALICE HAMILTON to industrial medicine is well worth reading. It was but a slight incident which drew her into the arena of industrial hygiene. The occasion was opportune. The United States had awakened to the necessity of improving the conditions under which factory labour was conducted, and into the movement Dr. Hamilton threw herself with earnestness and enthusiasm. The Government early recognized the importance of her labours, and sought from her monographs relating to occupation and illness. Subsequently she was appointed lecturer on industrial diseases in

[1] *Modern Operative Surgery*. Vols. i and ii. Edited by G. Grey Turner, M.S.; F.R.C.S. Second edition. London: Cassell and Co. Ltd. 1934. (Pp. 1,764; 860 figures, 11 plates. £3 3s. the two volumes.)

Harvard University. With Kober, Gilman Thompson, F. D. Patterson, and others, including Fred. L. Hoffman, she ranks as a pioneer. Although her previous treatise is a monument of research and careful observation, *Industrial Toxicology*[2] is not an epitome, but a new book written from a different point of view. Dealing with the social environment of industrial workers, the author reminds us that their mortality rate is higher than the average of all males from 25 years onwards, so that by the time the forties are reached it may be 43 per cent. higher than the average of all males between the ages of 45 and 54. After middle life the average blood pressure is higher among the working classes than among the professional. The inordinately high death rates from cerebral haemorrhage, Bright's disease, and organic diseases of the heart are mainly due to the effect of strenuous labour, exposure to changes of temperature and to specific poisons.

As indicating the importance Dr. Hamilton attaches to lead poisoning, one-ninth of the text is devoted to plumbism. This is a subject she is specially familiar with, and which she approaches from all sides. The respiratory tract is the important channel of entrance of lead into the system in the form of dust. Absorption by the skin and gastro-intestinal canal is a less likely mode of entrance, as shown by Blumgart's experiment of tying the oesophagus and inserting a cannula into the trachea, so that the animal could breathe, while lead carbonate dust was sprayed into the nostrils and subsequently recovered from the internal organs. Lead is rapidly absorbed by the mucous membrane of this part of the respiratory tract, and enters directly into the general circulation without passing through the liver. From a poisoning-prevention point of view this is important, for it indicates the necessity of controlling dust in all industries. It was found in the English potteries that when dust was strictly controlled the rate per cent., which was 0.9 in 1913, had so declined by 1924 that there were no acute cases of plumbism among 2,600 persons employed. After its absorption lead appears in the blood as a dibasic phosphate, and is gradually deposited in the bones in the form of the rather insoluble tribasic. Over 90 per cent. of the lead in the system may thus be stored in the skeleton, while all the time minute quantities of the metal are being eliminated in the urine and by the faeces. Illness and metabolic changes in the system may create conditions such as a mild acidosis. Slowly the lead deposited in a comparatively insoluble form thus becomes soluble, circulates in the blood, and may cause a fresh attack of plumbism. The reviewer has seen such, also similar, events follow the administration of large doses of potassium iodide. The metabolism of lead seems to run parallel with that of calcium, for whatever draws calcium to or from the bones also draws lead, as Aub and his co-workers at Harvard found. The anaemia of lead workers, the physical changes in their blood, also the symptoms generally of lead poisoning, including the debatable causes of colic, are all carefully considered. The pages devoted to tetra-ethyl lead provide interesting reading. Poisoning by this substance takes place by inhalation or through the skin. Among its earliest symptoms are insomnia, with restless, excited dreams, a sense of tiredness, vomiting, a fall of blood pressure, and changes in the blood.

Several pages are devoted to poisoning by other metals, including "metal fume fever," better known in this country as "brass founders' ague." Symptoms follow exposure to, and inhalation of, the fumes given off during the pouring of molten brass. They are attributed to the zinc rather than to the copper ingredient. The malady, which is a succession of chills, followed by headache and prostration, has for more than a century been known in England, as also the circumstance that, so long as the men continue regularly at work, they remain quite well, but if absent for a long week-end, or through illness, they invariably suffer from the ague-like attacks on resuming work. Lehman is of the opinion that brass poisoning is a form of protein poisoning from resorption of the products of the cells which line the alveoli of the lungs having been killed by the action of zinc oxide. Brass fumes cause a leucocytosis; hence Drinker attributes the immunity of the men when at work to the defensive action of the leucocytes, also their liability to an attack after a few days' absence from work to the subsidence of the leucocytosis.

Harmful gases are dealt with, also poisoning by coal derivatives, including occupational cancer. The book closes with an interesting chapter on radioactive substances, and with an account of the fatalities which, in the United States six years ago, overtook several young women who were employed in painting the illuminated dials of clocks and watches. Dr. Alice Hamilton has produced an excellent monograph. She has shown herself to be a careful observer and an accurate interpreter of facts, as well as the possessor of high expository gifts.

[2] *Industrial Toxicology*. By Alice Hamilton, M.D. Harper's Medical Monographs. New York and London: Harper and Brothers. 1934. (Pp. 352. 12s. 6d. net.)

## CLINICAL DIAGNOSIS

The sixth edition of "Clinical Diagnosis"[3] by the late Dr. A. MARTINET is a handsome publication running into over 1,100 pages, and profusely illustrated by excellent diagrams and plates. Martinet died just after the publication of the fourth edition of his classic work, and its revision was placed in the sympathetic hands of an editorial committee worthy of their deceased colleague. Martinet stoutly maintained that the basis of all rational and successful treatment must be correct diagnosis—that is, one which fully explains symptoms, morbid anatomy, disturbances of physiological function, and aetiology—and he begins his work with the words "Comprendre pour agir." There is a chapter on the causes of error in diagnosis and how to avoid them, which well repays reading. *Errare humanum est perseverare diabolicum.*

The book is divided into two main portions: that on diagnostic procedure and the systematic examination of patients and pathological material takes up rather more than half the pages, while under symptomatology the symptoms are treated in alphabetical order. The sixth edition has been entirely revised, and there are numerous new chapters, notably on bronchoscopy, bronchiectasis (*dilatation des bronches*), pulmonary abscess, gastroscopy, investigation of the permeability of arteries, etc. There is a long chapter on the novel laboratory method of interferometry, which is now coming into vogue in Germany and France, and which shows considerable promise in the elucidation of the diagnosis of tumours and endocrine disturbances.

The reader must be struck by the beautiful print and admirable synoptic tables, and by the abundance and clearness of the illustrations which demonstrate examination procedures. Nothing is taken for granted, for Martinet is anxious to lessen the chances of error in diagnosis due to ignorance. The semi-diagrammatic illustrations aim particularly at avoiding errors of technique on the part of the examiner, and demonstrate the correct procedures in a manner only too rarely seen. It is difficult to single out any particular series for special commendation, but those illustrating the *x*-ray appearances of the thoracic and abdominal viscera will perhaps be of the greatest interest. The section on the examination of the lungs contains a very useful glossary of terms used

[3] *Diagnostic Clinique. Examens et Symptomes*. By Dr. A. Martinet. Sixth edition. Paris: Masson et Cie. 1934. (Pp. 1,154; 867 figures, 8 coloured plates. Broché, 120 fr.; cartonné toile, 145 fr.)

in auscultation. There is a good section on the examination of the blood, which also contains a table of the principal normal chemical constituents of the blood, with explanations of pathological variations in quantitative analysis. The chapter on the radiology of the urinary tract has been rewritten, but unfortunately there are no illustrations. The examination of the nervous system is well described and well illustrated, as is also that of the eye and its functions.

The alphabetical index of symptomatology occupies 500 pages, and the illustrations and tables in this part of the work call for special mention. The etymology of medical terms is a feature of this section. The book closes with a useful alphabetical list of authors whose names are associated with the principal clinical signs. The work might be improved by a more detailed general index, but taken as a whole it is a textbook of which the editors may justly be proud. Martinet is never dull.

### HUMAN PERSPIRATION

In view of the fact that there are some two million or more sweat glands on the surface of the human body, and that these eliminate not inconsiderable amounts of water in the course of the day, a detailed study of their physiology would certainly appear well worth while. The small and attractively presented monograph[4] on the subject by Professor YAS KUNO deals very largely with the work done in his own department at the Manchurian Medical College, Mukden. The monograph is written in excellent English, and the manner of publication reaches the usual high standard which one expects from Messrs. Churchill. As much of Professor Kuno's own work has previously been published only in Japanese this account of it is particularly welcome. The methods which he has evolved and so extensively used for the measurement under physiological conditions of perspiration in different areas of the body are ingenious, and allow a degree of precision not hitherto reached.

It would be impossible in the short space at our disposal to convey an adequate impression of the contents of this book. We may say in outline that after discussing the structure, nerve supply, and distribution of the different types of sweat glands met with in man, the author proceeds to expound methods for measurement of perspiration, sensible and insensible. It is interesting to note that among the methods is one which involves the insertion of a capillary tube into the duct of a sweat gland, with direct reading of the flow of sweat into the tube. The conditions and regulation of sweating caused by heat are next discussed, and then follows an account of the discovery, made in Professor Kuno's laboratory, that the sweating of the palm of the hand and the sole of the foot is occasioned by mental exertion and not by rise of temperature, while in the rest of the body the reverse is the case; in the axilla both thermal and mental sweating are encountered. There is also a full discussion of the sweating occasioned by muscular exercise, of the loss of water and salt caused by sweating, and various other features, both normal and abnormal, associated with sweat secretion. The mechanism and significance of sweating are discussed in the final chapter, reference being made, among other things, to Harvey Cushing's recent work on central control of sweating.

Though the conclusion reached supports the opinion long held that the sweat glands on the general body surface are particularly of importance in the regulation of body temperature, certain subsidiary functions are pointed out, among which the chief would appear to be that the sweat glands of the palm of the hand and the sole of the foot protect the skin from dryness during insensible perspiration, and facilitate the performance of physical work. The value of the contribution lies in the fact that nearly all the experiments discussed were carried out on the human subject, certain racial differences in detail being emphasized, and the differences from the sweating of the pads of the cat's feet, which have been so much employed in the past, are discussed. There is an excellent bibliography.

[4] *The Physiology of Human Perspiration.* By Yas Kuno. London: J. and A. Churchill Ltd. 1934. (Pp. 268; 38 figures. 12s. 6d.)

### GYMNASTICS FOR GIRLS

In the second volume of *Principles of Gymnastics for Women and Girls,*[5] FRÖKEN ELLI BJÖRKSTÉN has continued a work which should prove most valuable to all those engaged in teaching or advising exercise for physical culture. All who have read the earlier volume will agree fully with the opening remark in the introduction of Part II—"A clear understanding of the main principles that underlie the choice and arrangement of exercises contained in Part II of this book is impossible without a thorough knowledge of Part I of the same work."

After the first two chapters, in which general principles of class teaching are dealt with, the book is divided into chapters in which exercises for the various parts of the body are given in detail. Each of these chapters is subdivided into sections in which exercises suitable to children of various ages are grouped. Stress is laid in each section on the best method of approaching the class with a view to getting the enjoyable co-operation of the children in the work of the lesson. Wherever possible the exercises are given in the form of games which would appeal to the imagination of all normal children, and are an indication of the ingenuity of the author. A ready understanding of the movements involved in the exercises is greatly assisted by diagrams printed in the margin beside the detailed description.

Any teacher of physical culture in possession of this book should have no difficulty in providing fresh and stimulating courses of instruction to classes of girls of all ages. It is difficult to see, however, why all this valuable advice should be addressed exclusively to teachers of girls. Surely boys would benefit equally by the instruction.

## Notes on Books

"Simple Quantitative Clinico-chemical Methods for Investigations of Urine and Blood,"[6] by Professor E. BECHER, is a textbook of 160 pages, written for the purpose of explaining to practitioners how to carry out some of the simpler chemical tests used in clinical practice. Professor Volhard, in a short introduction, says that a number of students and practitioners wish to perform for themselves certain of the tests used in his clinic for the examination of blood and urine, and this work has been written with a view to showing them how to obtain reasonably accurate results with simple apparatus. The work is one that could only be produced by a person with very extensive experience of the methods, and this the author possesses. He suggests that it may not meet the approval of all chemists, but explains that he has aimed at finding the very simplest technique by which a result of diagnostic value can be obtained fairly quickly. The simplified methods are the results of many years' work in Volhard's clinic, and have all been thoroughly checked against the full chemical methods. In addition, the author has endeavoured to

[5] *Principles of Gymnastics for Women and Girls.* Part II. By Elli Björkstén. Translated from the second Swedish edition, published in Finland (1932) for the Ling Association of Teachers of Swedish Gymnastics, by S. Kreuger and J. H. Wicksteed. Foreword by May Fountain. London: J. and A. Churchill. 1934. (Pp. 591; 564 figures. 21s.)

[6] *Einfache Quantitative, Klinisch-chemische Harn und Blutenter-suchungsmethoden.* By Professor Dr. med. et phil. Erwin Becher. Jena: G. Fischer. 1934. (RM. 7.50; geb., RM. 9.)

assess the probable clinical value of the results obtained. In general, the volume appears to fulfil admirably its purpose of informing practitioners of the methods of clinical chemistry.

In *The Modern Fowler*[7] Mr. J. WENTWORTH DAY presents a stimulating account of that most primitive, strenuous, and romantic of all gun sports—wild-fowling—and in his introduction Sir Claude Champion de Crespigny laments the evil effects on modern youth of the "fleshpots of this petrol-ridden Egypt." The salt-water gunner is an explorer; his sport is a continual challenge to wind, tide, and weather, to snow, frost, and rain, and to the wariest birds these islands possess; it demands attributes of hardihood, patience, and devilry which "are the proper ingredients of a man of spirit." The author covers the country between the Thames and the Wash, and gives us a highly coloured picture of the estuaries, marshes, and mud-flats of East Anglia, their avian and human inhabitants, and the queer instruments of war that are used. The terminology is as attractive as the material. The punt-gunner "sprits along, setting up to fowl"; his boat is "crowded over the flat" (that is, pushed off the mud); there are "coymen," "waller's holes," "mud-pattens," "cripple-stoppers," "bosses," and "bland magnums," and, on the part of the natives at least, there is a good deal of strong language. Aspirin, we note, is useful against gun-headaches from firing heavy black-powder charges out of 8-bores and 4-bores; iodine is carried against splinters; while only the very best rum is advocated against "chills."

Longmans, Green and Co. have now published a cheap edition of *The Way of All Women*,[8] by Dr. ESTHER HARDING, with an introduction by Dr. C. G. Jung of Zurich. The original edition, at three times the price, was noticed in these columns on January 6th, 1934.

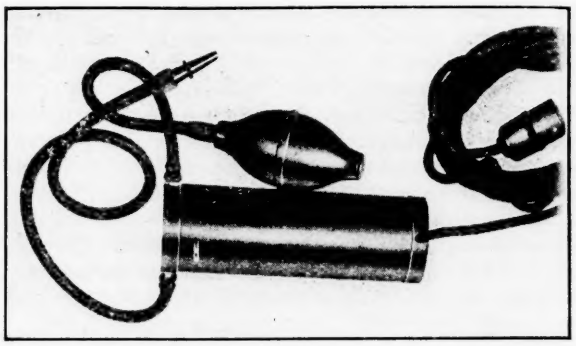
"The Medicinal Index and Therapeutic Vade-mecum,"[9] edited by Dr. M. T. SCHNIRER, is a standard pocket reference book in two parts, which has now attained its thirty-seventh edition. Most of the first part is occupied by a therapeutic index of the treatment of disease and an index of common medicaments. The latter will be found of value by those who have occasion to learn the composition of German proprietary remedies. The remainder of this part contains a miscellany of medical information. The second part forms a useful therapeutic annual report, which includes hundreds of abstracts of articles published during 1933, and dealing with therapeutic advances. It may be mentioned that the abstracts cover literature published in German, French, and English. This part also contains a variety of mixed information. There is a section on obstetrics and gynaecology, and another on dietetics, the latter being furnished with some serviceable tables. The volumes together constitute a very useful work for quick reference on therapeutic questions.

[7] *The Modern Fowler.* By J. Wentworth Day. London: Longmans, Green and Co. 1934. (Pp. 303; 36 illustrations. 16s. net.)
[8] *The Way of All Women. A Psychological Interpretation.* By M. Esther Harding, M.D., M.R.C.P. London: Longmans Green and Co. 1934. (Pp. 335. 5s. net.)
[9] *Medizinal-Index, 1935.* Two volumes. Edited by M. T. Schnirer. Wien: Franz Deuticke. 1934. (M. 4.60.)

## Preparations and Appliances

### NASAL APPLICATION OF VAPOUR

Mr. W. S. THACKER NEVILLE, F.R.C.S.Ed. (Harrogate), writes: Dr. Wells of Washington, D.C., published, in the *Laryngoscope* for October, 1932, a paper on treating suppurative disease of the nasal sinuses by the use of warm medicated vapour containing nascent iodine. I have employed the same method for treating subacute and chronic catarrh of the middle ear. Dr. R. A. Friel invented a very useful apparatus (for the same purpose) which is worked with a spirit lamp, and he recommends this treatment in cases of rhinitis in children which are not due to the congestion of the inferior turbinals and retention of secretion in the lower nasal passages, but show infection in the upper nasal area. I show here a picture of the original Wells apparatus, which is made by the Medical Supply Association, Gray's Inn Road, London. The preparation used is in the form of a powder containing iodine, boric acid, camphor, menthol, and powdered cubebs, each 4 per cent.; thymol, 1 per cent. Sixty grains of this powder are placed in the barrel of the electric heater



and as soon as the heat reaches a sufficient degree a cloud of smoke emerges from the tip of the heater. The heater is suspended from a stand, and so both hands of the operator are left free to pour the vapour into the Eustachian catheter or into the catheter inserted into one of the sinuses.

### HOLDER-PUNCH FOR USE WITH NAIL FOR FRACTURED NECK OF FEMUR

Mr. ROBERT I. STIRLING, F.R.C.S.Ed. (Edinburgh), writes: During the operation of nailing the fractured femoral neck by the Smith-Petersen method I have sometimes had difficulty in introducing the nail in the desired direction on account of the propinquity of the large flap, the shortness of the nail, and the obscuring of the nail by holding forceps or by the hand.

To overcome this difficulty the holder-punch has been devised. It consists of a rod of stainless steel, about eight inches in length. One end of the rod has been drilled to a depth of one and three-quarter inches. Into this drilled hole the head and upper part of the Smith-Petersen nail can be placed, leaving an adequate length of the sharp end of the nail protruding. The nail is held snugly in position, and the direction it will take in the femoral neck and head can be easily regulated by altering the angle at which the holder-punch is held. The hand grasping the holder-punch is well away from the site of introduction, which is clearly seen.

After the outer cortex has been perforated by Smith-Petersen's special instrument, the sharp end of the nail is applied to the desired place of entrance. Then by hammering the other end of the holder-punch the nail can be driven into the bone in the desired direction sufficiently far to guarantee that subsequent hammering will not alter the line it is taking. When the nail has been driven in till the holder-punch impinges against the outer surface of the femur, the holder-punch is pulled off the nail and is reversed, so that the smaller end, which is hollowed out as a punch, can be placed over the protruding head of the nail. By hammering the hollow end of the holder-punch the nail can then be driven home. The Smith-Petersen impactor is used as requisite in the normal way. The use of this instrument not only ensures a "first-time" correct introduction of the nail, but also allows the nail to be driven in under full sight, and minimizes the handling of tissues. The makers suggest that a bakelite rubber or boxwood hammer should be used instead of a metal hammer, which might damage the ends of the holder-punch.

The holder-punch and standardized Broomhead-Smith-Petersen nails, of an improved make, have been constructed for me by Messrs. Down Brothers, Ltd.

## WILLESDEN MATERNITY HOSPITAL

### SIR COMYNS BERKELEY ON ANTE-NATAL CARE

An extension of the Willesden Maternity Hospital at Kingsbury was opened on December 29th by Sir Comyns Berkeley. Four years ago the Willesden Urban District Council (now the Borough Council) converted a derelict small-pox hospital into a maternity hospital of thirty-one beds. Applications for beds soon proved greater than the accommodation available, and the hospital has now been extended by the addition of three pavilions, bringing the total accommodation up to fifty-eight beds and providing for about 1,000 confinements a year.

The Mayor of Willesden, accompanied by the aldermen and councillors, presided over the ceremony. Dr. C. de B. Thomson and Dr. W. Paterson also attended as chairman and honorary secretary respectively of the Willesden Division of the British Medical Association.

Sir COMYNS BERKELEY said that when the corporation decided to convert its small-pox hospital into a maternity hospital the medical officer of health for Willesden, Dr. G. F. Buchan, asked him to nominate a consultant obstetrician, such an officer to reside on the premises and to be responsible for the entire management on the medical side. The request was difficult to meet, because the corporation wanted to engage the services of a man who, in the usual course of events, would be a candidate for the staff of a teaching hospital—the ambition of every obstetrical surgeon. He approached a colleague of his own, Mr. Arnold Walker, a man of extensive experience and a first-class organizer, and persuaded him to offer himself for the post, and, fortunately for the people of Willesden, he was appointed. The corporation was to be congratulated on its wisdom in securing a site of ten acres with room for future expansion. It was fortunate in its medical officer of health, Dr. Buchan, a man as keen on his work and as learned in his specialty as any medical officer in the kingdom, who, with Mr. Arnold Walker, had shown great vision in the lay-out of the hospital. They all hoped that the four isolation beds would rarely be needed, and to judge from the splendid record of the hospital up to date in absence of puerperal sepsis (a previous speaker had mentioned that of 494 cases treated during the last recorded year not one Willesden mother had lost her life while under the care of the hospital) it seemed that those beds were likely to remain largely unused.

It was the provision of eight ante-natal beds (Sir Comyns Berkeley continued) which interested him most, because he felt that those beds would be the means of saving the lives of many inhabitants of the borough. They formed a most important section of any maternity hospital. One could well understand the desire to provide as many lying-in beds as possible (thirty-eight in this hospital), but he believed that if generally a larger provision were made for ante-natal beds a marked diminution in maternal mortality would be brought about. The maternal death rate had not decreased during the last ten years, and indeed in 1933 was a shade higher, a state of affairs all the more distressing when the vast improvement in the general health was considered.

The obstinately high maternal mortality had been attributed to many factors: to confinement in miserable and unhealthy surroundings—but in fact puerperal sepsis was commoner among those women socially better situated; to nutritional deficiency; and again to inefficient teaching of midwifery to medical students. He did not believe in any of these factors, and as for obstetric teaching, this had markedly improved of recent years; if it had not done so the death rate would have been higher still. The blame had been laid—even by some members of the medical profession—at the door of the doctors. But no one was going to tell him that the medical men of this generation, instructed as they were in surgical cleanliness and all that appertained thereto, were not taking as much care and trouble when attending a woman in her confinement as when attending a surgical case. It was well known to obstetric surgeons that some of the worst cases of puerperal sepsis occurred in women who had given birth to children in the absence of all expert attendance, and had never been examined internally either before or after the birth of the child. These were cases of autogenous infection, and to what extent these cases were responsible for the death rate no one knew. In such cases were included those of septic abortion, which had shown a steady increase during the last ten years. By some members of the community abortion was regarded so lightly that the doctor was not called in until the condition of the woman was septic and perhaps hopeless. Cases of criminal abortion were included in the same category. The incidence of criminal abortion could not be assessed, but there was evidence that it was alarmingly on the increase, and even if the abortion was only attempted, and was not successful, it was an important factor in the incidence of puerperal sepsis at childbirth. An inquiry by the American Government some time ago showed that 45 per cent. of the deaths which were assigned to puerperal sepsis were preceded by abortion. Non-septic abortion had shown a steady rise during the last ten years, and in 1933 reached its highest level. Altogether these abortions accounted for 12 per cent. of the total maternal death rate, and over such cases the medical man had very little control. This state of affairs could only be overcome by an Act of Parliament, long overdue, requiring the registration of every case of abortion, and that every case of therapeutic abortion should be certified as justifiable by an expert obstetrician and, if necessary, by a physician who was an expert in the illness from which the woman was suffering. Only by such means could non-therapeutic abortion be stamped out.

In his own view the reason why maternal mortality did not decline was to be found in the neglect by the women themselves to take advantage of facilities for ante-natal care, or, in some cases, to the neglect of the authorities to provide such facilities. As many ante-natal clinics should be provided as were necessary to supervise the health of all pregnant women who were not under the care of a private medical attendant, and these clinics should be attached to a consultative ante-natal clinic officered by acknowledged experts. There should be a well-equipped service directly available to a doctor or midwife who wanted further advice or assistance, such assistance to include the services of an expert obstetrician and a State registered nurse if necessary. The obstetric surgeon should not only have the power but the facilities to admit a patient requiring special ante-natal treatment to an ante-natal bed, or, if she required a major operation, to a well-equipped hospital. The public must be educated to appreciate that the powers of the average doctor were somewhat limited, and that it was impossible for him to do his best without such a service behind him. A request by a doctor for such assistance must not be regarded by the public as a sign of inefficiency on his part, but the contrary.

Sir Comyns Berkeley said that he had dissected the reports of the Registrar-General from 1924 to 1933, in which 27,684 maternal deaths were recorded. Some part of that toll could be markedly diminished by such an ante-natal service as he had outlined, but so long as more than one-half the pregnant women absolutely disregarded or were unable to obtain facilities for ante-natal care the position was very disappointing. The limelight had been thrown too exclusively on puerperal sepsis when it might just as helpfully have been thrown upon ante-natal supervision and care. The death rate for the last ten years attaching to puerperal sepsis was 1.6 per 1,000 live births, or, deducting those cases of septic abortion over which the medical man had little control, it was 1.3. But there was another group of deaths, accounting for 1.4 per 1,000 births, which certainly might be avoided if proper ante-natal care were instituted. The high maternal death rate made many women dread what in the vast majority of cases was a purely physiological act, and that dread itself was a factor in the declining birth rate, and also perhaps added to the mortality, because fear was well known to diminish resistance to infection. If only all pregnant women, rich and poor, had proper ante-natal supervision the outlook for the nation would be far brighter.

British Medical Journal

SATURDAY, JANUARY 5th, 1935

# WHAT IS OSTEOPATHY?

In this week's *Supplement* we print a memorandum drawn up by the Committee on Osteopathy appointed by the Council of the British Medical Association, along with a detailed criticism of some of the clauses in the Parliamentary Bill for the Registration of Osteopaths, which has already passed a second reading in the House of Lords. We would ask members of the Association to read these two documents carefully, for it is important that they should understand what osteopathy is, and what would be the position if this Bill became law. Osteopathy is not the manipulative surgery which is practised by orthopaedic surgeons and "bone-setters." The bone-setter, *pur sang*, is a manipulator of joints. The osteopath is a practitioner of a new system of medicine based upon the theorizings of the founder of osteopathy, the late Dr. Andrew T. Still of Kansas, U.S.A. The second schedule of the Bill for the Registration and Regulation of Osteopaths sets out the subjects in which osteopaths are to be qualified. They include anatomy, embryology, chemistry, physiology, pathology, bacteriology, dietetics, minor surgery, gynaecology, and obstetrics. The practice of osteopathy is to include, also, psychiatry, diseases of the heart, lungs, nervous system, and alimentary tract; and acute and infectious diseases and syphilis. In fact, it covers the whole field of medicine, with the exception of major operative surgery. In order to understand this system it is pertinent to inquire at the fountain-head.

"I have concluded," A. T. Still said, "after twenty-five years of close observation and experimenting that there is no such disease as fever, flux, diphtheria, typhus, typhoid, lung-fever, or any other fever classed under the common head of fever or rheumatism, sciatica, gout, colic, liver disease, nettlerash, or croup, on to the end of the list, they do not exist as diseases. All these separate and combined are only effects. The cause can be found and does exist in the limited or excited action of the nerves which control the fluids of part or the whole of the body. . . . He who wished to successfully solve the problem of disease or deformity of any kind in every case without exception would find one or more obstructions in some artery, or vein. At an early day this philosophy solved to me the problem of malignant growths and their removal by a restoration of the normal flow of arterial fluid. . . . The rule of the artery is absolute, universal, and it must be unobstructed, or disease will result. . . . I believe that God has placed the remedy for every disease within the material house in which the spirit of life dwells."

According to Still, obstruction of the artery or interference with the nerve was caused by the pressure of maladjusted bones, especially of the vertebrae of the spinal column. This conclusion seems to have been reached as a result of his "cure" of the child with the bloody "flux." Still found that the child's back was hot and the belly cold, and that there were "rigid and loose places in the muscles and ligaments of the child's whole spine." So he set to work, by manipulation, to try and "push some of the hot to the cold places." Still thought that one ounce of the brain is used for thought, that one treatment once a week was enough for any case of liver disease, and that the blood corpuscle has knowledge. "Now you say," he writes, "I am going to get God into trouble by making a statement, claiming that each one of the five million corpuscles contained in a single drop of blood knows just what is expected of it. Is this blasphemy? No. As the troops of General Cook obey his commands unfalteringly, so God's infantry, imbued by Him with mentality, go forth to fulfil their appointed mission in unswerving obedience."

These quotations from Still's autobiography have been given at some length so that readers may form some idea of the man's mentality and of his method of approach to his subject. He himself claimed to have clairvoyant powers, and his extraordinary fantasy life is revealed in the visions he describes. In one vision he saw a cock: "The rooster reached his neck into the dark and 'cockadoodledooed.' It seemed an age before he got out 'doodledoo,' and five hours before I could see George and hear from Brother D." Still seems to have been that peculiar American product in which religiosity and a smattering of science are successfully combined with business acumen and showmanship.

It is perhaps now clear why, in the memorandum to the Bill now before Parliament, osteopathy is vaguely defined "as a developing system of treatment of disease by manipulative methods." It is also clear that the phrase "treatment by manipulative methods" is being misinterpreted by the lay public. They think it means treatment of the kind of injury sustained in the hunting-field and on the tennis lawn by the rectification of maladjusted or displaced joints, strained ligaments, etc.—the kind of treatment carried out by the "bone-setter" or by the orthopaedic surgeon. The osteopaths who are seeking statutory recognition do not intend to restrict their activities to this narrow field, any more than did Dr. Andrew T. Still. They are asking for the right to administer anaesthetics, to treat all medical diseases, to perform minor operations, and to sign certificates of death and of birth. The Lord Chief Justice, Lord Hewart, said in the second reading debate that as a lawyer he was staggered by the proposal that an osteopath should be allowed to certify the cause of death. We, too, are "staggered" at the proposal that he shall "have power to sign certificates of birth," for this must be taken as implying a claim by the osteopaths to practise midwifery. Indeed, midwifery is included in their syllabus. It is in keeping with the wishes of Still, who had his pupils taught obstetrics. In the charter granted in 1894 to the American School of Osteopathy by the State of Missouri, the second article began thus: "The object of this corporation is to establish a College of Osteopathy, the design of which

is to improve our present system of surgery, obstetrics, and treatment of diseases generally, and place the same on a more rational and scientific basis, and to impart information to the medical profession." In 1917 the Supreme Court of Washington tried an osteopath for administering an anaesthetic and for removing tonsils by surgical methods. The Court said of osteopathy: "It now teaches that in childbirth lacerations, in certain types of tumours, etc., surgery must step in."[1] Enough has been said to make it plain that osteopathy is an attempt to enter the practice of medicine by the back door. Not only this: the osteopaths demand in the Bill that no person who is not on their register shall practise osteopathy—that is, treat disease by manipulative methods. They claim what the medical profession has never claimed—monopoly of treatment. The year after A. T. Still was born Carlyle bewailed the fact that "men are grown mechanical in head and heart as well as in hand." It is the duty of individual doctors to see that the public does not have thrust upon it a mechanical medicine which has its roots in fantasy.

## TESTS OF DISINFECTANTS

We publish at page 5 a paper on this subject by Dr. L. P. Garrod, which calls for comment in two directions. The contention of this paper is that methods of testing disinfectants should be standardized by some authority in order that there may be generally accepted terms in which the capacity of disinfectants, whether old or new, can be expressed and consequently judged by those who use them. It will be news to most members of the medical profession that one test has been standardized in a most unequivocal and authoritative fashion during the present year. Some two years ago the British Standards Institution was requested by manufacturers of disinfectants to issue a standard technique for the Rideal-Walker test. A committee was formed to consider this proposal, which included representatives not only of manufacturers and users, but of interested professional organizations, and Dr. Garrod represented the British Medical Association on this committee. It is clear from his report to the Science Committee of the Association that the deliberations which followed were concerned as much with one question of principle as with all the manifold details of technique which were involved.

To appreciate this question it is necessary to understand the use which is made of the Rideal-Walker test in commerce. Most disinfectants are sold with a guaranteed Rideal-Walker coefficient, and most large users test deliveries to ensure that they conform to their specification in this respect. Variations in technique have led in the past to endless discrepancies and disputes, and an authoritative pronouncement which would put an end to these has everything to recommend it. But some manufacturers also rely on, and quote, a Rideal-Walker coefficient as evidence of the efficiency of their products, and it was on this point that they encountered opposition, for it was urged by medical representatives that the published standard technique should be prefaced by a statement declaring that standardization was a matter of commercial convenience, and should not be held to imply any sanction of this test as an index of practical efficiency. The manufacturers' representatives strongly opposed this suggestion on the ground that this criticism applied also to other available tests, and the prefatory statement on which agreement was eventually reached represents a compromise between these two points of view. They also, not unnaturally, opposed any technical modifications which, without altering the general character of the test, might have the effect of altering all existing coefficients; certain unsatisfactory features of the test must be excused on this ground. The standard technique is now published, and the Rideal-Walker test is now consequently a British standard method. The committee responsible is at present engaged in exploring the possibilities of standardizing a test incorporating organic matter of the "excremental" type.

These developments have no reference whatever to the testing of surgical disinfectants, and Dr. Garrod is on safe ground in asserting that for this class of disinfectant there is no generally recognized appropriate test. To devise one which is generally applicable to clinical conditions may seem impossible, but just as what he calls the "excremental" type of disinfectant nearly always encounters dirt, so the surgical type nearly always encounters body proteins and cells, and since both of these are liberally contained in blood, this should form as satisfactory an addition as any to the test mixture. Another difficulty we foresee is that of persuading the medical profession to accept the findings of such a test. Antiseptics and their uses are very variously regarded, and those who believe in them have convictions born of years of tradition and experience which no laboratory pronouncement is likely to alter. Such pronouncements naturally cannot supersede the conclusions of careful clinical study; on the contrary, they require confirmation in the clinical field. But we believe that there are many practitioners who are not entirely satisfied with what they can at present achieve in this direction, and are therefore prepared to alter their procedure, at least on a trial basis, in accordance with reliable data from the laboratory. It has also to be remembered that the market has been flooded in recent years with new disinfectants, and it is in the interests not only of their users but of their manufacturers (at least where the products concerned are efficient) that there should be some accepted means of determining and expressing the clinical utility of these preparations. If a suitable test can be devised, and if it can by some means be given the requisite authority, its findings should be of much service in clarifying a department of medicine in which doubt and misunderstanding have hitherto been rather the rule than the exception.

[1] *The Medical Follies.* By Morris Fishbein, M.D. New York: Boni and Liveright. 1925.

## THE NEW YEAR HONOURS

The list of medical New Year honours will be found at page 26. Sir Holburt Waring, President of the Royal College of Surgeons of England, is created a baronet, receiving this distinction on the eve of his departure for Melbourne to open the new house of the Royal Australasian College of Surgeons. Another member of the consulting staff of St. Bartholomew's Hospital, Professor Walter Langdon Brown, who has held the Regius Chair of Physic at Cambridge since 1932, receives the honour of knighthood. Dr. Edmund Spriggs, senior physician at Ruthin Castle, and formerly assistant physician to St. George's Hospital and dean of the Medical School, is created K.C.V.O. Knighthoods are also to be conferred on Dr. John Boyd Orr, F.R.S., director of the Rowett Institute for Research in Animal Nutrition at Aberdeen, in recognition of his services to agriculture ; on Dr. Raphael West Cilento, senior medical officer in the Department of Health of the Commonwealth of Australia ; and on Lieut.-Colonel J. N. Duggan, professor of ophthalmology, Grant Medical College, and superintendent of the C.J. Ophthalmic Hospital, Bombay. Among the members of our profession appointed Commanders in various Orders we may mention here Lieut.-Colonel S. P. James, F.R.S., adviser on tropical diseases to the Ministry of Health ; Dr. Catherine Chisholm, physician to the Manchester Northern Hospital for Women and Children ; Dr. David Llewellyn Williams, medical officer to the Welsh Board of Health ; Professor John Clarence Webster, the Canadian archaeologist ; and Dr. William Ernest Jones, director of mental hygiene, Victoria, Australia.

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## TREATMENT OF ACUTE EMPYEMA

In view of recent correspondence on this subject in the *Journal*[1] it is of interest to study the account of the subject and the special technique given by Coquelet.[2] Starting with a historical survey, he reviews first the causes of post-operative mortality, and comes to the conclusion on the available evidence that it is in the direction of the prevention of an open pneumothorax that most of the serious complications can be avoided. Open pneumothorax, he concludes, produces asphyxia by two mechanisms: (*a*) by preventing air from entering via the glottis ; and (*b*) by the causation of anoxaemia by the now familiar conception of "sang mêlé." In the absence of adhesions fixing the mediastinum, the sound lung is embarrassed by the open pneumothorax as much as the collapsed lung. The individual patient can bear a thoracotomy in proportion to his vital capacity. The power of compensation to reduction of vital capacity depends, he says, upon the "general resistance," which must be maintained at all costs. These are, of course, mainly the conclusions of Graham's Empyema Commission in 1918, which revolutionized all ideas on open pneumothorax and streptococcal empyemata. Criticizing the various methods obtaining in the treatment of this condition, he concludes that it is of such great importance that closed drainage should, where possible, be employed, that all his own efforts have been to establish and improve such a technique. His contribution in this monograph lies in his particular method of intercostal drainage. It is necessary to read his article (which cannot be adequately abridged) to gain a complete idea of the methods he employs. They are well expressed with numerous diagrams. Briefly, he uses blunt trocars resembling miniature proctoscopes, but with a thumb-piece and wings. Two sizes are necessary, one of 10 mm. and the other of 6 mm. diameter. Tubes are employed of sufficient diameter to slip easily through the sleeve of the trocar, at the same time completely filling its lumen ; these drains are also graduated in centimetres. About 50 cm. long, they are provided with a lateral eye, 1 cm. from the end. Having located pus, the point of dependent drainage is chosen, when possible, in the postero-lateral region. With the skin and pleura anaesthetized, a bistoury with a blade narrow enough to make a hole just smaller than the diameter of the trocar is passed down as far as the pleura along the upper border of the rib. The trocar is then forced in on withdrawal of the bistoury, and the handle is removed. Blocking the jet of pus with a finger, the drainage tube is rapidly introduced about 5 to 8 cm. into the chest. Finally, the drain is closed by a clip which can be subsequently used for continuous drip irrigation. Coquelet describes in detail alternative methods of fixing drainage tubes. One of these is by a perforated flange sliding over the drainage tube and lying against the skin, secured to the former by a pin and to the patient by tapes encircling the chest, as in the standard pattern of Tudor Edwards's empyema tube. As soon as the patient is back in bed the tube is connected by a T-piece to an underwater drain and graduated irrigation flask. Dakin's solution is administered by continuous drip while the pleura is being emptied very slowly. He considers this slowness is necessary, particularly in left-sided empyemata, in order to avoid alarming circulatory complications. Respiratory exercises are commenced at once (though he recommends mainly expiratory efforts), and the continuation of drainage is controlled according to the appearances of the pus. Coquelet admits that, without the cavity itself closing, the tube may need replacing, and mentions lipiodol fluoroscopy (much in the manner described in the letter by Brian Taylor[3]) as the safest way of determining when to cease drainage. In giving his statistics from the Saint-Jean Hospital for 1930–2, he states that he has treated twenty cases by his later technique and had no mortality ; whereas the total mortality of the empyemata of the hospital, including errors in diagnosis and treatment, is 20.8 per cent. He has not had recourse to rib resection to improve the adequacy of the drainage when the cavity is slow in closing and where flakes of lymph tend to block his excessively small diameter intercostal tube ; he agrees, however, that these eventualities may arise. In a word, Coquelet's plea is for early closed drainage by an intercostal tube and subsequent continuous irrigation.

[1] *British Medical Journal*, November 3rd, 10th, 17th, and 24th, 1934.

[2] *Arch. Mal.-Chir. de l'Appareil Respir.*, 1933, viii, No. 4.

[3] *British Medical Journal*, November 10th, 1934, p. 881.

## STAPHYLOCOCCAL FOOD-POISONING

C. E. Dolman,[1] whose work on the treatment of staphylococcal infections was reviewed in the *Journal* of November 24th, 1934, has carried out a series of experiments on human volunteers to find out whether staphylococcal exotoxin is capable of giving rise to gastro-intestinal irritation. In the United States during the past five years there have been a number of outbreaks of acute food-poisoning, affecting at least 500 persons, which have been ascribed to staphylococci. Broth filtrates prepared from some of the strains isolated have actually been proved to be highly toxic for human volunteers when ingested in quite small doses, and the conclusion has naturally been drawn that the staphylococcal exotoxin is the responsible agent. Dolman throws grave doubt on this conclusion. He prepared very potent toxins, judging by their haemolytic titre and their power to kill rabbits on intravenous inoculation, and gave them by the mouth to human volunteers without result. A number of toxins from different strains were tested, and were consumed, sometimes in doses as high as 20 c.cm., by forty-two volunteers on 110 occasions. In view of these negative results obtained with strains isolated from suppurative lesions, he made a further experiment with a strain isolated from a food-poisoning outbreak. A culture filtrate of this strain, when given in a dose of 2 c.cm., caused severe gastro-intestinal disturbance in three out of nine volunteers and a lesser degree of disturbance in four of them, the onset and character of the symptoms being similar to those met with in natural outbreaks of food-poisoning. Since, however, this particular filtrate did not have a high exotoxin titre, and, since some of the volunteers who were made ill by drinking the filtrate had already consumed with impunity amounts of exotoxin twenty to thirty times as great, it is concluded that the gastric irritant is not identical with the exotoxin. Moreover, it appears probable that the gastric irritant is formed only by a minority of strains, thus accounting for the comparative uncommonness of staphylococcal food-poisoning. The first well-authenticated outbreak of staphylococcal food-poisoning due to milk has been reported by J. A. Crabtree and W. Litterer.[2] In a preparatory school in Tennessee, with a total resident population of ninety-seven, there occurred during September and October, 1933, no fewer than seven outbreaks of acute illness characterized by sudden onset of nausea and vomiting, diarrhoea, and sometimes prostration, coming on three hours after a meal. Fever was absent, and recovery soon followed emptying of the stomach. There was a total of 242 cases, some persons having as many as five attacks. Extensive bacteriological and chemical investigations of the various articles of food failed to reveal any of the ordinary Salmonella or dysentery organisms or metal or alkaloid poisons. From the milk and vomit, however, haemolytic staphylococci, mainly of the *aureus* type, were obtained in enormous numbers in practically pure culture. Some of the strains isolated produced powerful enterotoxins. When 3 c.cm. of a filtrate were given in pasteurized milk to human volunteers, symptoms similar to those in the natural outbreaks followed within half an hour to three hours. The milk supply came from a herd of thirteen tuberculin-tested cows owned by the school. Examination of specimens of milk withdrawn under practically aseptic conditions revealed the presence of haemolytic staphylococci in two of the cows, and experiments on volunteers showed that these organisms were capable of forming enterotoxic substances. The number of organisms excreted by these cows varied from time to time. Occasionally none was found, and sometimes large numbers were present in the milk. This intermittent excretion was probably responsible for the repeated outbreaks of poisoning. The two cows in which there was clinical evidence of mastitis were removed from the herd, and no further cases of poisoning were reported. The authors conclude by saying that the circumstances in which the outbreak arose merely add to the already overwhelming evidence supporting the need for rigid sanitary control of milk supplies.

[1] *Journ. Infect. Dis.*, September-October, 1934.
[2] *Amer. Journ. Pub. Health*, November, 1934, p. 1116.

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## THE NOSOLOGY OF NAPOLEON I

His diseases and death, like everything else connected with the great Napoleon, are of perennial interest and have received different interpretations. Thus the usually accepted view that he died of malignant disease of the stomach was fully discussed by Dr. Arnold Chaplin,[1] who also dealt with other points in 1913, and protested against the suggestion that, as has also been made of other great leaders—St. Paul, Caesar, and Swedenborg —" the man of destiny " was the subject of epilepsy. His slow pulse and curious cerebral attacks have not unnaturally been regarded as evidence of Stokes-Adams disease. In 1913 two further descriptions of his diseases were put forward ; Sir Arthur Keith[2] found that what had been regarded as secondary growths in the small intestine were really areas of lymphoid hyperplasia, and argued that they were due to a chronic form of undulant fever. While accepting the existence of gastric carcinoma the late Leonard Guthrie[3] showed good reason for the belief that at the close of his life Napoleon became an example of adiposo-genital dystrophy. More recently Pullé in 1932 and Abbatucci[4] in 1934 revived the opinion of Antommarchi, who performed the necropsy on Napoleon on May 6th, 1821, that death was due to hepatitis caused by dysentery, which was rampant in St. Helena during Napoleon's residence, and attacked 70 per cent. of the British troops and several members of Napoleon's staff. This view certainly raised the political accusation that the unhealthy conditions of his place of exile were responsible for Napoleon's death. The sequence of pathological events is thus interpreted as amoebic dysentery in October, 1816, hepatic abscess, rupture into the stomach (imitating at the necropsy a carcinoma) on March 17th, 1821, and peritonitis as fatal on May 5th. An illustration in Abbatucci's paper, of a piece of the small intestine with a raised plaque on the mucous membrane, stimulated Bincer[5] of Cieszyn, Poland, to put forward a new, if not very convincing,

[1] Chaplin, A.: *Illness and Death of Napoleon*, London, 1913.
[2] Keith, A.: *Lancet*, 1913, i, 187.
[3] Guthrie, L.: Ibid., 1915, ii, 823.
[4] Abbatucci, S.: *Presse Méd.*, Paris, 1934, xlii, 1269.
[5] Bincer, V.: Ibid., 1934, xlii, 1636.

explanation of the nature of the fatal illness. This is to the effect that the symptoms of relapsing fever, haemorrhage, and hepatic enlargement were due to the rare intestinal form of lymphadenoma, and that ulceration near the pylorus and its extension into surrounding parts, including the liver, imitated malignant disease.

## PHYSICAL EXERCISES FOR ASTHMA

A pamphlet on physical exercises for asthma approved by its honorary advisory council has been published recently in aid of the Asthma Research Council's funds.[1] It consists of a description of the mechanics of an attack of asthma together with a series of photographs of asthmatic patients practising the approved exercises and brief instructions for their performance. The primary object of the exercises is to teach asthmatics how to breathe properly. To many people the thought of breathing exercises calls up a mental picture of a chest as forcibly expanded as that of a cornet player, and it is obvious that any exercises encouraging such an attitude would be highly undesirable in one who is already able to expand his chest to its fullest capacity but lacks the power of efficient expiration. Exercises for the asthmatic are designed primarily to encourage him to use the lower part of his chest as well as the upper part and to acquire the habit of diaphragmatic breathing. In early cases, before the chest has assumed the typical barrel shape, the object of the exercises is to prevent this from occurring. In chronic cases they help to restore the lungs and chest cavity to their normal size. It is claimed that most patients, when they have learned how to breathe properly, "can prevent an attack of asthma progressing by doing the exercises." Such an easily applied method of lessening the severity of an attack would have a most beneficial effect in restoring confidence to an anxious patient. A good deal of perseverance is necessary before he could expect permanent improvement in the shape of his chest, but if the exercises, carefully performed, are persisted in, only good results would ensue. It is essential when beginning treatment that every patient should be taught how to do the exercises by a masseuse experienced in them and preferably should be supervised from time to time so that any fault might be corrected or improvement suggested. There is no preface or introduction to the pamphlet, and nowhere is it made clear whether it is intended for doctors or for remedial gymnasts or to be put into the hands of the asthmatic patients themselves.

## COURSES FOR SHIP SURGEONS

The explanation suggested by a correspondent to-day (p. 37) that the lack of support for the ship surgeons' post-graduate courses is due to inadequate facilities and absence of encouragement on the part of shipping companies may or may not be the right one. It is, however, a regrettable fact that little or no advantage is being taken of the courses, and it may be well to remind ship surgeons, and those who contemplate taking up service as ship surgeons, of the post-graduate study which is thus made available. The courses are the outcome of the work of the Ship Surgeons' Post-graduate Training Committee of the British Medical Association, which, in 1930, recommended that courses should be instituted, and that they should be divided into three parts, each part to extend over a period not exceeding four weeks. The committee also indicated the scope of the respective parts. Arrangements were subsequently made for post-graduate instruction on the lines of the committee's recommendations to be available in London, or in Liverpool if the requirements of a sufficient number of candidates warranted this. Part I of the course covers ships' hygiene, the Shipping Acts, and quarantine procedure: it deals with such matters as general ship construction—including accommodation, ventilation, etc.—dietary, the supply and storage of food, infectious diseases, and the control and prevention of vermin, etc. The fee for this course is 6 guineas. Part II, which is on tropical medicine and hygiene, consists of laboratory work and clinics on cases of tropical diseases, in addition to lecture demonstrations. The fee for this part is 4 guineas. Part III, which is a "refresher" course in clinical subjects, provides an outline of up-to-date methods of clinical diagnosis and treatment, with special regard to limitations which obtain at sea and to the equipment at the disposal of a ship surgeon. The fee for Part III is 6 guineas. It is not compulsory upon candidates to take all three parts; they may take one or more in accordance with their individual requirements. Inquiries should be made in the first instance to the Seamen's Hospital Society, Greenwich, S.E.10.

## EXHIBITION OF DOCTORS' HOBBIES

In connexion with the forthcoming Annual Meeting of the British Medical Association in Melbourne it is proposed to hold an exhibition of the hobbies of medical men and women. Such hobbies as drawing, painting, photography, craft work of various kinds, and the collection of stamps, coins, butterflies, and native weapons would be suitable for display; many others will no doubt suggest themselves. Members of the Association who propose to visit Melbourne next September are invited to contribute to the exhibition. Arrangements have been made for any exhibits from over-seas to be admitted free of customs duty, and valuable objects will be covered by insurance while on display. Any member who is willing to participate should write at once to Dr. Colville, at Medical Society Hall, Albert Street, East Melbourne, C.2, stating the nature of his exhibit and the amount of space (wall or table) which it is likely to occupy.

The Trustees of the Bernhard Baron Will Fund on January 1st made grants totalling £75,000. The total sum distributed since the fund came into operation now amounts to £237,352. Some of the principal grants are: £10,000 to the Personal Service League, £5,000 to Lord Mayor Treloar's Cripples Hospital, £5,000 to the Heritage Crafts Schools, Chailey, £5,000 to St. Bartholomew's Hospital and new Medical College, and £5,000 to the Salvation Army Mothers' Hospital. In all, forty-three institutions throughout the country will benefit under the present distribution.

[1] Copies can be obtained for 2s. post free from the Secretary, Asthma Research Council, c/o King's College, Strand, W.C.2.

# TREATMENT IN GENERAL PRACTICE

*This article is one of a series on the management of some of the major medical disorders met with in general practice*

## THE TREATMENT OF HAEMOPTYSIS

BY

G. E. BEAUMONT, D.M., F.R.C.P.

When a doctor is called to attend a patient suffering from haemoptysis he should first inquire, if he is not already acquainted with the medical history of the patient, whether or not he is known to be suffering from pulmonary tuberculosis or any other disease which may give rise to haemorrhage from the lungs. In this country the most common causes of haemoptysis are pulmonary tuberculosis, mitral stenosis, and bronchiectasis. A very severe and rapidly fatal haemoptysis may be due to the rupture of an aneurysm into a bronchus.

The next step consists in the examination of the chest by inspection, palpation, and auscultation. Percussion must not be practised owing to the risk of increasing the bleeding. The heart should first be examined in order to determine whether or not mitral stenosis is present. In haemoptysis due to pulmonary tuberculosis, if the lesion is early, the physical signs are often very slight, and it may be difficult to decide from which side the bleeding is taking place. In such instances the patient may be able to say that he feels the blood coming from one side of the chest.

### Haemoptysis Due to Pulmonary Tuberculosis

In all cases, whether slight or severe, the patient should go to bed until the bleeding has stopped.

#### MILD CASES

The treatment is usually easy in slight instances of haemoptysis, in which the sputum is tinged with blood, small clots are expectorated, or when small quantities of liquid blood are brought up. In addition to keeping the patient in bed until no more blood is apparent in the sputum, a morning and evening record of the temperature and pulse rate should be taken, to determine whether there is an indication of active tuberculosis. A determination of the sedimentation rate of the red cells of the blood will also afford a valuable indication as to activity.

During the continuance of the haemoptysis all food must be served cold, fluid should be restricted to two pints in the twenty-four hours, and the diet should consist of milk, jellies, custard, bread and butter, cold fish, and cold chicken. The bowels should be opened by magnesium sulphate ʒii in ʒii of water *mane*, and if this is not efficacious a simple enema should be administered every other morning. Calcium should be given by mouth in some such preparation as collosol calcium (Crookes), ʒi in water three times a day. This calcium should be continued for two to three months. When the bleeding has ceased, and if the temperature has been normal throughout, or after the first day or so, the patient may be allowed to get up and return to work a week later.

In all cases of haemoptysis due to pulmonary tuberculosis the patient must be warned that he must not expose his naked body to the sun, and preferably he should, when out of doors, sit in the shade. Undoubtedly cases of haemoptysis are more common in heat waves, when sun bathing is prevalent.

#### MODERATELY SEVERE CASES

Here the haemoptysis is usually indicative of activity of the tuberculous lesion. The temperature is raised and fails to return to normal in a day or so, and tubercle bacilli are at times found in the blood-stained sputum. The patient should be placed in bed, semi-recumbent on two pillows, and turned slightly to the side from which the bleeding is taking place, if this is known. He must be on "absolute rest," and not allowed to do anything for himself. He must be kept in a quiet room and no visitors allowed. An injection of 1/4 grain of morphine sulphate should be given subcutaneously. Patients usually like to have a little ice to suck, and this may do good for psychological reasons. They also frequently appreciate the inhalation of a few drops of oil of turpentine from a handkerchief. If the bleeding persists a capsule of amyl nitrite (5 minims) should be broken under the patient's nostrils and the vapour inhaled. Further remedies which are of value in refractory cases consist in the intravenous injection of 1 c.cm. of collosol calcium (Crookes) daily, and the subcutaneous injection of 20 c.cm. of coagulen (Ciba) twice during the first day. The morphine may be repeated every six hours, but not more than 1 grain should be injected in twenty-four hours, owing to the risk of diminishing the cough reflex and causing the inhalation of infected material into healthy portions of the lungs. The injections of coagulen may be repeated in daily doses of 1.5 c.cm. for a week, if necessary. In some protracted cases the daily intramuscular injection of 1 grain of emetine hydrochloride for twelve doses has proved of value.

#### SEVERE CASES

If these measures for the arrest of the haemorrhage are unsuccessful and the patient is in danger of losing his life, further active treatment is required. The thighs and upper arms should be bandaged sufficiently tightly to occlude the venous but not the arterial circulation. The bandages are applied first to the thighs for half an hour and then to the upper arms for half an hour. In the meanwhile preparations are made to induce an artificial pneumothorax on the affected side.

The initial or No. 1 artificial pneumothorax (A.P.) needle is sterilized by placing it in methylated spirit, and then holding it in forceps and lighting it in the flame of a spirit lamp. The sterilized needle is then placed in a kidney dish which has been sterilized by flaming. The patient is propped up in bed with two or three pillows, lying on his back with the arm abducted on the affected side. He should not be turned on to the sound side. The skin is painted with iodine in the mid-axilla. The sterilized skin in the fifth or sixth intercostal space in the mid-axilla is then anaesthetized with 2 c.cm. of 2 per cent. novocain solution, using for the skin and subcutaneous tissues a very fine needle (No. 16) and then a larger one (No. 12) for the intercostal muscles and

pleura. The pleura can usually be felt after the needle has penetrated through the muscles and a little novocain is injected into it. The needle is then partially withdrawn (so that it will not snap off at the hilt if the patient moves) and the syringe detached. After a few minutes the A.P. needle is attached to the rubber tube leading to the manometer of the A.P. apparatus, the novocain needle is taken out of the chest, and the A.P. needle inserted at the same spot. The initial needle consists of a trocar and cannula, and should be held between the thumb and middle finger, the index finger being pressed firmly on the top of the trocar as it is pushed through the skin and subcutaneous and muscular tissues. When the needle is judged to be nearly through the intercostal muscles the trocar is withdrawn, the tap of the needle is closed, and the cannula is pushed gently inwards until it is felt to reach the pleura. At this point a small swing can often be seen in the manometer. It is then gently pushed through the parietal layer of the pleura, when a good negative swing of the manometer should be obtained, such as −7 −14, indicating that the end of the cannula is free in the pleural space. The clips on the rubber tubes of the A.P. apparatus are now released and air is allowed to enter the pleura. Usually between 500 c.cm. and 800 c.cm. are required to produce sufficient collapse of the lung to check a severe haemoptysis.

It should be remembered that in cases of haemoptysis in which an artery has eroded into a cavity there is no known treatment which will arrest the haemorrhage, and the patient dies in the space of a few minutes, having often expectorated a surprisingly small quantity of blood.

### Haemoptysis Due to Mitral Stenosis

The cause of bleeding from the lung in these cases is probably a pulmonary thrombosis rather than passive venous congestion. The patient should be put to bed. If auricular fibrillation is present or the cardiac rate is unduly frequent, digitalis should be given in doses adequate to reduce the rate to about 80 a minute. The digitalis can be administered either in the form of the tincture, tablets of digitalis leaves, or as Nativelle's granules of digitaline. The average dose required for the first twenty-four to thirty-six hours is 30 minims of the tincture, three tablets (1 grain each) of the folia, or one granule (1/240 grain) of the digitaline. In any case the digitalis should not be given more frequently than every six hours, and if large doses are prescribed the apex rate should be counted before each dose is given in order to prevent an overdose.

The coagulability of the blood may be diminished by a mixture such as sodium citrate grains 30, tinct. aurantii minims 5, aquam ad ʒi, ʒi t.d.s., or by applying two or three leeches over the skin of the chest, and by giving a grape-fruit every day.

### Haemoptysis Due to Bronchiectasis

Recurrent attacks of pulmonary haemorrhage, slight or of some severity, may be the only symptom of bronchiectasis. The diagnosis is established by *x*-ray examination after the injection of lipiodol. There is generally little that can be done in the way of active treatment to check these recurrent haemoptyses, as frequently the bronchiectasis is central or near a main bronchus and resistant to collapse therapy. The bleeding is not usually severe enough to warrant a lobectomy. During the haemorrhage the patient should be kept in bed and treated on the lines described above for haemoptysis due to pulmonary tuberculosis.

## NEW YEAR HONOURS

The list of New Year Honours was issued as a special supplement to the *London Gazette* on Tuesday, January 1st. The names of the following members of the medical profession are included.

*Baronet*

Sir HOLBURT J. WARING, C.B.E., M.S., F.R.C.S., President of the Royal College of Surgeons of England.

*K.C.V.O.*

EDMUND IVENS SPRIGGS, M.D., F.R.C.P.

*Knights Bachelor*

WALTER LANGDON BROWN, M.D., F.R.C.P., Regius Professor of Physic, University of Cambridge.

JOHN BOYD ORR, D.S.O., *M.C.*, M.D., D.Sc., F.R.S., Director, Rowett Institute for Research in Animal Nutrition, Aberdeen.

RAPHAEL WEST CILENTO, M.D., Senior Medical Officer, Department of Health, Commonwealth of Australia.

Lieut.-Colonel JAMSHEDJI NASARVANJI DUGGAN, C.I.E., O.B.E., L.M. and S., F.C.P.S.Bombay, D.O.Oxon, Professor of Ophthalmic Medicine and Surgery, Grant Medical College, Bombay, and Superintendent, C.J. Ophthalmic Hospital, Bombay.

*C.B.* (*Military*)

Major-General JAMES FITZGERALD MARTIN, C.M.G., C.B.E., M.B. (late R.A.M.C.), Honorary Surgeon to the King, Deputy Director of Medical Services, Western Command, India.

*C.M.G.*

WILLIAM ERNEST JONES, M.R.C.S., Director of Mental Hygiene, State of Victoria.

JOHN CLARENCE WEBSTER, M.D., D.Sc., LL.D., F.R.C.P.Ed., Archivist and member of the Historic Sites and Monuments Board of Canada.

Lieut.-Colonel SYDNEY PRICE JAMES, M.D., F.R.S., Medical Officer and Adviser on Tropical Diseases, Ministry of Health, and Member of the Colonial Advisory Medical Committee.

*C.I.E.*

Lieut.-Colonel EDWARD SELBY PHIPSON, D.S.O., Indian Medical Service, Civil Administrative Medical Officer, Health Officer of the Port of Aden, and Medical Officer, European General Hospital, Aden.

Major HENRY JAMES RICE, *M.C.*, Indian Medical Service Military Hospital, Poona, attached to the Royal Deccan Horse.

*C.B.E.* (*Civil*)

Miss CATHERINE CHISHOLM, M.D., Physician, Manchester Northern Hospital for Women and Children.

DAVID LLEWELYN WILLIAMS, *M.C.*, F.R.C.S.Ed., D.P.H., Medical Officer, Welsh Board of Health.

*O.B.E.* (*Military*)

Lieut.-Colonel GEORGE DUNCAN RALPH BLACK, V.D., M.D., lately Principal Medical Officer, Hong-Kong Volunteer Defence Corps.

*O.B.E.* (*Civil*)

Miss EDNA MARY GUEST, M.B., Chief of Department of Surgery, Women's College Hospital, Toronto.

ALBERT REGINALD MCLEOD, M.D., Chief Staff Officer, St. John Ambulance Brigade, New South Wales.

JOSEPH WELSH PARK HARKNESS, M.B., Deputy Director, Department of Health, Palestine.

Major AHMAD KHAN SAHIBZADA, M.B., B.S., Indian Medical Service, Civil Surgeon, Hazara, North-West Frontier Province.

PERCY BRIGSTOCKE, M.B., L.R.C.P., Chief Medical Officer of the Victoria Hospital, Damascus.

*M.B.E.*

ALEXANDER JARDINE HUNTER, M.D., for services as missionary-physician in pioneer settlements of Manitoba, Canada.

JAMES DOUGLAS ALLEYNE, M.D., Port Health Officer, Barbados.

KHAN BAHADUR ABDUL QUDIR KHAN, L.M.S., lately Civil Surgeon and Superintendent, Kohat Jail, North-West Frontier Province.

*Kaisir-i-Hind Medal*

REGINALD JOHN HANDS COX, M.R.C.S., L.R.C.P., Church Missionary Society, Doctor in Charge of the Afghan Mission Hospital, Peshawar, North-West Frontier Province.

GOTTFRIED ORAM TEICHMANN, M.B., B.S., Medical Missionary of the Baptist Mission, Chandraghona, Chittagong Hill Tracts, Bengal.

## BALCONIES FOR BABIES IN FLATS

### MEMORANDUM BY THE R.I.B.A.

We have received for publication the following letter on the provision of balconies for infants in multiple-story flats, signed by the President of the Royal Institute of British Architects, Sir Giles Gilbert Scott, R.A., the chairman of the Arts Standing Committee, Professor A. B. Knapp-Fisher, and the chairman of the Science Standing Committee, Mr. S. Pointon Taylor.

SIR,

The importance of including at least a small private balcony to working and middle-class flats, large enough to take a cot for infants up to 2 years, has been brought to the notice of the Royal Institute of British Architects. After careful consideration it was felt that the matter was one of first importance to architects and others who are responsible for the planning of such flats. Moreover, it was felt that it was the duty of the profession, without whose co-operation little could be done, to call attention to the matter, supported by medical opinion. With this in view both medical and architectural evidence was sought, and the following memorandum was prepared and submitted to the Minister of Health, who suggests that its publication may be the best means of bringing the matter before those concerned.

The subject divides itself broadly into three headings —namely: (1) The medical and health aspect. (2) The economic aspect. (3) Planning and construction.

#### MEDICAL AND HEALTH ASPECT

The baby is essentially an out-of-door creature. It is important that it should start an out-of-door life at once to fit it for a partially indoor life. The critical years are from birth to 2 years.

Fresh air is one of the first and essential preventives against colds, bronchitis, pneumonia, tuberculosis, rickets, etc. Rickets is a disease which occurs in the first two years of life, and its prevention is rendered more difficult in flats without balcony accommodation. A flat without a private balcony is considered by some as incomplete as a flat without a bathroom.

A small private balcony large enough to take a basket or cradle within easy reach of the mother is what is wanted as a minimum. Quiet is necessary. The roof and ground are of little or no use if the baby is out of sight and the mother worried. The mother must be in reach of the baby, and able to see it if possible.

The south is the best aspect, but east or west, and even north, nearly as good. Direct sunlight is not essential, and is sometimes too strong. Reflected sky light is as good. High, solid balconies are not desirable. Open wrought-iron balconies on a small plinth are best. There need be no fear from draught. Some protection from cats and inclement weather is needed.

Noisy common approach or connecting balconies are not desirable for the purpose, and even a family balcony does not give the same quiet. A recessed balcony does not meet the case as a projecting balcony does, as there is not the same direct sky reflection.

#### ECONOMIC ASPECT

There is ample evidence to show that the provision of a small private balcony is quite feasible even in the lowest-priced flats, and it would be true to say that its inclusion adds only negligibly to the cost. The cheapest form of balcony is one that can be provided as a complete unit in cheap materials, and reinforced concrete for floor and curb is generally considered the most economic material for the purpose.

#### PLANNING AND CONSTRUCTION

There is no real difficulty here. The chief problems in connexion with such buildings are access, overshadowing, safety, aspect, cleansing. The committee investigating the matter was unanimously of the opinion that as a minimum a projecting balcony, of a size sufficient to take a cot, was an essential part of the accommodation of a dwelling flat. It was realized that while most competent architects and many housing authorities were alive to the needs of such balconies, and were including them in the schemes under their supervision, there was evidence to show that little or no attention was being paid to the question in many quarters. The fact that some mothers do not and would not use such balconies for the purpose was not considered to be an argument against them.

Opinion was voiced that attempts to check preventable diseases during the first two years of a child's life would be rendered extremely difficult if the majority of babies were to be left indoors for hours together in the flats which are likely to be erected all over the country during the next few years; and that, alternatively, the provision of such balconies, if properly used, must and would have a great beneficial effect on the health of future generations.

## Australia

[FROM OUR CORRESPONDENT IN SYDNEY]

### Weil's Disease

The outbreak of Weil's disease in the Ingham district, North Queensland [an account of which appeared in the *Journal* for December 22nd, 1934, p. 1142] is the first that is known to have occurred in Australia. With it new public health and new economic problems arise. The difficulties in the way of prophylaxis are tremendous. The extermination of rats is at present impracticable. The farmers, no doubt, are constantly engaged in a campaign against rats, with the object of protecting their crops; yet the vermin continue to thrive. It is difficult to suggest any measures to prevent exposure to infection in the absence of more precise evidence. One thing is certain: the men must go into the cane-fields (presumably the infected areas) to cut the cane. If men are to be exposed to the risk of a serious, sometimes fatal, disease, they are likely to demand additional pay. Indeed, this risk, added to the strain of arduous work in a humid tropical climate, seems scarcely to be worth taking unless there is adequate compensation. The worker might well ask: "What possible compensation is there?" The cane farmers are not so prosperous at the present time as to be able to afford much in the way of monetary compensation. If Weil's disease should spread to other parts of the cane area it seems possible that this great industry might be in jeopardy. An interesting point brought out by this epidemic is the possible relation between this disease and the so-called Mossman fever, sarina fever, and coastal fever. No doubt some of these fevers reported in the past have been endemic typhus, and some have been aberrant typhoid or paratyphoid; others have probably been due to leptospirosis.

### An Intermediate Ophthalmic Service

The recent opening of an institution for the provision of ophthalmic benefits for persons of small means marks a new departure in ophthalmic practice in New South Wales. Hitherto the benefits of expert ophthalmic medicine and surgery have been readily available to the

very poor and to those in comfortable circumstances. Persons of small means, however, were forced to attend public hospitals or to raise sufficient funds to permit their consulting ophthalmic surgeons privately. The former procedure might be repugnant to them; the latter might entail considerable hardship. The ophthalmic departments of public hospitals in Sydney have been dealing with ever-increasing numbers of patients, which, in many cases, have become so large that the honorary ophthalmic surgeons have been scarcely able to attend to them all. It has long been realized that many of these patients were able to afford a small fee but not the consultant's ordinary fees. These are the people for whom the Medical Eye Service of New South Wales has been founded. The institution is the result of the activities of the Ophthalmological Society of New South Wales—a body of practitioners engaged only in specialist ophthalmic practice. The affairs of the institution are controlled by a company—the Ophthalmic Association, Limited—the shareholders of which are all members of the Ophthalmological Society of New South Wales. Any member of the society may become a shareholder in the company by the payment of a nominal sum, and being a shareholder may, if he so desires, work as a medical officer of the institution. The New South Wales Branch of the British Medical Association officially approves the scheme and the means provided for its control, and maintains a direct interest in the affairs of the company by appointing one member to the board of directors. The company has not been formed with the object of making profits and paying dividends to its shareholders, but for the purpose of controlling the affairs of the institution. The medical officers are paid for their services with what remains of the fees after expenses have been deducted. The company has equipped consulting rooms in a building at 267, Elizabeth Street, Sydney, where the work is done. The rooms are open to patients on six days and five evenings each week. The evening consulting hours give working people the opportunity of obtaining attention without losing time from their employment. The out-patient departments of hospitals in Sydney are open in the daytime only. Persons eligible for attention at the institution are members of friendly societies and their dependants, and persons in receipt of a salary of less than £260 per annum and their dependants. It is believed that the Medical Eye Service of New South Wales is unique in that it is controlled solely by medical practitioners without the assistance, financial or otherwise, of lay persons.

### Malaria

There is very little endemic malaria in Australia, even in the great tropical regions of the north. From time to time, however, the disease appears in localized epidemic form, usually in some remote part of the country where a number of men are living in fairly close association under bad sanitary conditions, as in a mining camp. As the outbreak is unexpected and no preparations have been made for it, and little or no specific treatment is available, a high mortality rate is the rule. An unusual epidemic occurred recently on stations and in native settlements along the banks of the Fitzroy River and its tributaries, in the north-west of Western Australia. The Fitzroy River flows westward, entering the Indian Ocean at Derby. Before the outbreak there had been abnormally heavy rains in the district, probably causing flooding of the river and the formation of pools along the banks, which would be suitable breeding-places for anopheline mosquitos. The disease was characterized by cerebral and gastro-intestinal symptoms, staggering gait, terminal jaundice, and coma. A diagnosis was made on the spot of gastric influenza, but the Commissioner of Public Health for Western Australia, Dr. R. C. Everitt Atkinson, suspecting malignant malaria, requested blood films to be dispatched by air mail to Perth. Examination of these revealed *Plasmodium falciparum*. It was concluded, therefore, that whether there was influenza or not there was certainly malignant malaria, and this at least contributed to the mortality. It is reported that 150 aborigines and fourteen white people have died. It is suggested that the infection was carried by nomad natives from the Wave Hill district in the Northern Territory, where malaria is endemic, and which is not far from the Western Australia border. An unusual feature of this epidemic was that it occurred in a region where the population is widely scattered. Incidentally this is one more illustration of the incalculable value of aerial transport in the maintenance of public health in Australia. Aerial transport and wireless telegraphy provide the inhabitants of distant and isolated parts with a means of obtaining urgent medical service which formerly was denied them.

## Ireland

### Therapeutic Substances Act (Irish Free State)

The Minister for Local Government and Public Health, after consultation with the advisory committee, has made regulations as to the standards of therapeutic substances in regard to: (*a*) the standard of strength, quality, and purity of the therapeutic substances to which the Act applies; (*b*) the tests to be used for determining whether such standard has been attained; and (*c*) the units of standardization. The regulations further require: (*a*) that if any therapeutic substance to which the Act applies is advertised or sold as a proprietary medicine, or as contained in a medicine so advertised or sold, the accepted scientific name or names descriptive of the true nature and origin of the substance specified in the regulations shall appear on the label; (*b*) that the date of the manufacture of therapeutic substance to which the Act applies shall be stated in the prescribed manner on all vessels or other packages in which it is sold or offered for sale, and the sale of such substance after the expiration of the period specified in the regulations from the date of manufacture shall be prohibited; (*c*) the sale or offering for sale of any therapeutic substance to which the Act applies, otherwise than in a vessel or other container as specified in the regulations, shall be prohibited, and the specified label or other description shall be affixed to such vessel or container. The provisions relating to labelling, other than those contained in paragraph "E" of Article 8 (1) of the regulations, come into operation on March 1st; the remaining provisions come into force on June 1st.

### Appointments Commission (Irish Free State)

At a recent meeting of the General Council of Medical Associations (Executive of the Irish Medical Committee) the following resolutions were passed unanimously, and copies ordered to be sent to the President of the Executive Council, the Chairman of the Appointments Commission, and the Minister for Local Government and Public Health.

(1) That the General Council of Medical Associations (Ireland) strongly impress on the Government the necessity of adopting the recommendations of the Select Committee appointed in 1928 to inquire and report on the working of the Local Authorities (Officers and Employees) Act, 1926. (2) That in order that the Appointments Commission should command the confidence of candidates, particularly in the case of those who are applicants for medical appointments, recommendation VIII should be at once adopted—namely, that in any case where the Commissioners are unwilling to

recommend the candidates placed first in order of merit by the selection board the latter shall again be summoned to consult with representatives of the Commission. (3) That the Council, in pressing for the adoption of this recommendation, is satisfied there is an urgent necessity for it: (*a*) in the interests of the candidates, and (*b*) that in the event of the non-adoption of the recommendation difficulty will be found in finding suitable members for the selection boards who will command the confidence of the candidates and the medical profession. (4) That in regard to personality the recommendation of the select committee should be adopted—namely, that the maximal number of marks prescribed should not be greater than 5 per cent. of the total obtainable. (5) That the Council is of opinion: (*a*) that the selection board should examine the medical qualifications, etc., of applicants before inviting the attendance, and that only those candidates with a reasonable prospect of success should be put to the expense of attending for interviews; (*b*) that candidates with physical and other defects of a permanent nature should not be summoned a second time for an interview; (*c*) that as members of the selection boards receive no remuneration for their services, and as the candidates' expenses in attending for interviews are high, the entrance fees for candidates should be substantially reduced, and should not be recurrent for applicants for vacancies within twelve months; (*d*) or alternatively, the selection board should sit at suitable intervals, not longer than six months, to select candidates, who should be placed on a roster in order of merit, and from this roster vacancies as they occur should be filled; (*e*) that candidates, if they desire it, should be informed by the Commission of their placing by the selection board. (6) That recommendation VII of the Dáil Select Committee should be adopted—namely, "that every selection board to be set up by the Commissioners . . . should be constituted with the assistance of the particular expert advice of the Department concerned." (7) That in the case of local authorities making appointments under Section V of the Local Authorities (Officers and Employees) Act, 1926, the Council would ask the Minister to refuse his sanction to any appointment where length and merit of service were not considered, and that in the event of the recommendations of the Dáil Select Committee being adopted he would have the Act amended so that the appointments to be made under Section V would be referred to the Appointments Commission.

### Medical Research

A joint committee of representatives of the Royal Academy of Medicine in Ireland and the associated hospitals has submitted a report recommending the setting up of a Medical Research Council with power to appoint investigation committees for special subjects. The joint committee also recommended that for the proper conduct of this medical research a grant of £250,000 should be made from the sweepstakes fund now in hand, and £100,000 be allocated from each sweepstake, including the last Grand National, no deduction of stamp duty to be made in respect of this £100,000 until a full capital fund of £1,000,000, to be placed in the hands of the trustees, has been accumulated. The trustees, five in number, are to be nominated by the executive council, and the selections will include a nominee of the Minister for Local Government, a judge or other lawyer, a business man, a man of acknowledged scientific attainments, and a banker or other financial expert who may be the chairman of the Currency Commission. The Medical Research Council, which would have the power to distribute the amounts available from the funds of the trustees, should consist of twelve members: three from the constituent colleges of the National University in Dublin, Cork, and Galway; one from Trinity College, Dublin; one from the Royal College of Science; one from the Royal College of Physicians; one from the Royal Academy of Medicine; two Government nominees; two hospital nominees; and one from the Medical Registration Council. This report has been submitted to the Minister for Local Government, and the Hospitals Commission is awaiting his decision on it. The joint committee considers that £15,000 should be made available in the first year after the appointment of the Research Council, and £30,000 in succeeding years, and that two aspects of research should be put into operation—one national and the other international in character. It is considered that international contacts should be made by arranging facilities for Irishmen to work and study abroad, and by bringing foreign investigators to this country. The provision of a special institute at the commencement of the scheme is considered premature and inadvisable. The Research Council, having regard to the progress made and the circumstances which might prevail in the future for research, could establish an institute, if desirable and advantageous, in ten or fifteen years.

## England and Wales

### British Post-Graduate Medical School

The London County Council proposes to appoint a whole-time physicist to the radiological department at Hammersmith Hospital in connexion with the British Post-Graduate Medical School. This department will become a consultative centre for the whole of the county hospital service, and cases will be sent there from other hospitals for expert opinion on diagnosis and treatment. The physicist will be attached to Hammersmith Hospital, but will also discharge duties hitherto performed by part-time physicists at Lambeth Hospital, and will be available at any other institution. A salary of £750, rising by increments of £50 to £1,000, is proposed. The additional maternity and isolation accommodation at Hammersmith Hospital will shortly be ready. The work of adaptation has cost just over £5,000, and the furniture and equipment just over £1,100. Certain wards have also been adapted to form eleven clinical rooms, the furnishing of which will cost £750. To ensure satisfactory attention to patients the whole of the resident medical staff is to be accommodated in the central administrative block. Twenty of the nursing staff bedrooms temporarily vacant are to be converted into four suites, each comprising a sitting-room and bedroom, for four assistant medical officers, and eleven bed-sitting rooms and one common sitting-room for post-graduates acting as resident medical officers. The nursing staff displaced will be accommodated elsewhere. The whole of the cost of this work, including equipment and furniture, will be a charge on the London County Council, as the assistant medical officers are required for hospital purposes. The post-graduate students will pay for their board and lodging in accordance with the agreement between the Council and the School.

The question of the extent to which consultant and specialist services will be provided by the staff of the British Post-Graduate Medical School has yet to be finally decided, and pending a settlement of this question the L.C.C. proposes that its existing consultant and specialist services, which were to be reviewed at the end of December, 1934, shall be continued as at present until the end of March, 1935.

### Medical Developments in Bristol

With the appointment of a full-time professor of medicine the ties between the local health authority and the medical school of the University of Bristol have been further strengthened. In October, 1933, Sir Hilton Young, the Minister of Health, opened a new department of preventive medicine at the University under Dr. R. H. Parry, the medical officer of health, as professor of preventive medicine. Professor Walker Hall relinquished his

chair of pathology to become the first director of the new department. In this department three sections have developed—bacteriology, clinical pathology, and chemistry—the latter being under the direction of the public analyst. With regard to the new full-time chair of medicine to which Dr. C. Bruce Perry has been appointed, the Health and Education Committees of the City Council become responsible for part of the salary. Dr. Bruce Perry, who is assistant physician to the Bristol General Hospital, becomes physician to the Municipal Hospital and consulting physician to the City Council; he is responsible also for the municipal cardiac clinic, which appointment he has held since the death of Dr. Carey Coombs. In this way valuable material and opportunities are made available to the professor of medicine for teaching and research purposes. The Municipal Hospital at Southmead now has some 500 beds. Professor Drew Smythe, who recently succeeded Professor R. S. S. Statham in the chair of obstetrics at the University, has been appointed obstetrician in charge of the maternity department, to succeed Professor Statham. This department has been developed and equipped along most modern lines, and the number of maternity cases admitted to the hospital exceeded 800 last year, as compared with about 150 in the years 1927 and 1928. It is recognized by Bristol University for part of the training in this subject for the medical degree. Among other developments at the hospital is an orthopaedic department, which was established in 1931 under Professor Hey Groves and Mr. Chitty, with Mr. Kenneth Pridie as assistant surgeon. The surgeons in this department are responsible for all the orthopaedic treatment carried out for the City Council: all the operative work is concentrated at the Municipal Hospital. Mr. G. R. Girdlestone is the consulting orthopaedic surgeon. Recently a new operating block was erected, and in this, accommodation and equipment were supplied for orthopaedic as well as for general surgery; rooms were also provided for electrical treatment and remedial exercises. These rapid developments in recent years are a sure sign that the Municipal Hospital is filling a need in the city. It is gratifying to note that the valuable facilities are made available to the medical school of the University for research and teaching purposes.

### Annual Returns of Health Services

Copies have been received of the forms of annual return for 1934 which the Ministry of Health requires from local authorities with respect to maternity and child welfare, hospital treatment, venereal diseases, and tuberculosis. The Ministry urges that the returns should be completed at the earliest possible date after the end of the year, but in any case not later than the last day of February. The forms for maternity and child welfare and hospital treatment are substantially the same as in previous years. In the case of venereal diseases there are two forms, one for the purpose of recording the number of infections dealt with at the treatment centre, and the other, required from the approved laboratories, recording the totals of pathological examinations. On this form, under the heading of the various categories of tests, there have to be shown the number of such tests undertaken for treatment centres and for practitioners respectively, the fee per test, and the cost. The forms of return for tuberculosis are subject to the variation announced by the Ministry a year ago. Two forms are issued, one of them relating to the dispensary service and to residential treatment, and the other to the after-histories of patients treated under tuberculosis schemes. It has been found that the value of Part G in the first of these, which is arranged to show the immediate results of treatment of definitely tuberculous patients in residential institutions, has been seriously impaired by the inclusion of a number of short-stay patients, some of whom may be readmitted several times during a year. In future no patient is to be included in this part of the form who has not remained in a residential institution for a continuous period exceeding twenty-eight days. Short-stay patients are to be included in the totals given in another part of the form, which is arranged to show the number of pulmonary and non-pulmonary patients dealt with annually in residential institutions.

### Central Midwives Board

At the December meeting of the Central Midwives Board for England and Wales, letters of resignation as examiners were considered from Professor Statham (Bristol centre) and Mr. A. W. Bourne (London centre). The Board recorded its best thanks for their efficient services, and placed their names on the list of those medical practitioners who are willing to be called upon in special circumstances. A letter was considered which had been written by the county medical officer of health for East Sussex, submitting several points of difficulty which have arisen in connexion with the revised rules. In reply to one of these the Board resolved that whether a midwife, when in attendance upon any particular case, is acting as a midwife or as a maternity nurse is a question of fact. If she acts under the direction and personal supervision of a registered medical practitioner she is acting as a maternity nurse, but if she does not so act she is deemed to be acting as a midwife. With reference to another of the points raised the following reply was approved: "When a midwife summons medical aid she is bound to summon the doctor desired by the patient, and if there is a fear that the patient will require some doctor other than the medical officer to be summoned in case of an emergency, an arrangement might be made with the patient when she enters the institution that if medical aid be necessary it shall be given by the medical officer, or if she requires the services of another doctor she shall pay his fee." The dates of the ordinary meetings for the year 1935 were arranged as below: January 3rd, February 7th, March 7th, April 4th, May 2nd, June 6th, July 4th, October 3rd, November 7th, December 5th. In the event of any urgent business arising an additional meeting will be held towards the end of July.

## Scotland

### Stirling District Mental Hospital

The sixty-second annual report of the Stirling District Mental Hospital, by Dr. Robert B. Campbell, medical superintendent, shows that on May 15th, 1934, there were 1,027 certified patients on the hospital register as against 1,032 at the corresponding date in 1933. The total number of certified patients under treatment during the year was 1,259 as compared with 1,275 in the previous year. The number of admissions was 227, including 118 males and 109 females, and the number of discharges 232. The ages on admission varied from 6 to 90 years, nineteen patients having been under 20 and seventeen over 70, with an average age of 39 for both sexes. Only thirty-eight of the patients admitted could be described as being in average good health; in 129 health was indifferent, while sixty were in poor or feeble health or were suffering from serious ailments. Ninety-five patients suffered from acute mental ailments, and in these recovery could be expected; 132 had confirmed or chronic forms of insanity with little prospect of recovery. In twenty-two cases the patients suffered from senile insanity, being frail and bed-ridden. There were fourteen cases of general paralysis or other

gross brain disease, and twenty of congenital mental enfeeblement ; ten were associated with epilepsy, and three were the result of encephalitis lethargica. With regard to causes, the breakdown was attributed to serious bodily illness in sixteen patients, to old age in twenty-two, and to syphilis in thirteen ; epilepsy had preceded the mental illness in ten cases and alcoholic excess in eighteen. There had been a previous mental breakdown in fifty-seven of the cases. On May 15th, 1933, there were twenty-three voluntary patients in residence, while thirty were admitted during the year. Of the latter, twenty-one were rate-supported and nine were private patients, and this is the largest number of voluntary patients admitted in any one year. Twenty-six voluntary patients left the institution cured or greatly benefited during the year. Out of 133 patients discharged, consisting of sixty-one men and seventy-two women, ninety-seven were recovered, giving a recovery rate calculated on the number of admissions of 42.8 per cent. for both sexes. There were ninety-nine deaths during the year, the rate calculated on the average number resident being 9.5 per cent. The causes of death were: circulatory diseases, nineteen cases ; disease of the nervous system, including general paralysis, sixteen ; senile decay, fourteen ; acute diseases of the lungs, fourteen ; tuberculosis, eight ; and malignant disease, six. The mean age at death was 56.5 years for both sexes. Treatment by prolonged hot baths continued to be useful in allaying excitement and promoting sleep in certain cases, and often obviated the necessity for sedative drugs. Encouraging results were obtained from the treatment of general paralysis by tryparsamide ; up to the present time only a small proportion of those discharged after treatment with tryparsamide have been readmitted. Electrotherapeutic measures, such as electric baths, high-frequency applications, or artificial sunlight, were employed in the treatment of 222 patients, and in many cases beneficial results followed.

### Training of Nurses

The departmental committee which is inquiring into the question of the training and registration of nurses in Scotland has held a further meeting, at which evidence was given by the Department of Health for Scotland, the Scottish Education Department, and the General Board of Control for Scotland. The Department of Health considered that at present the training of nurses was too sectionalized. This applied even to general hospitals, for while fifty years ago such hospitals were practically the only ones in existence, and as such gave a training that was in fact "general," they were now, as the result of the development of special hospitals, dealing with a much narrower field of disease. Under existing circumstances a nurse wishing to obtain an all-round training, embracing all sections of nursing, must spend much more time than trainees in other professions, and one of the main questions was whether by co-operation between the various hospitals it would be possible for a nurse to pass from hospital to hospital and obtain such an all-round general training in a reasonable number of years. If a training of this kind could be taken in, say, five years, the nurse would be free thereafter to specialize in any branch to which she felt drawn. The questions discussed with the Scottish Education Department's representative related chiefly to the educational standard that might be required of nurses, if a standard were to be laid down, and to arrangements for suitable instruction if a proposal was made that the theoretical subjects should be taken before entering hospital. It emerged that nurses did not have the same benefits of financial aid in training as are enjoyed by most other professions, either directly or indirectly. In the opinion of the witnesses from the General Board of Control it would be of advantage if nurses in mental institutions received a general training. The period of further training in the mental hospital could then be substantially reduced without detriment to the institutions or the nurses.

### A New Students' Journal

The Glasgow University Medico-Chirurgical Society is about to publish this month the first number of what will be a quarterly medical periodical. The new journal will include reports of the transactions of the society ; afford a means for publishing original work by students ; provide a medium for the expression of opinion on medical topics ; and contain information about addresses, lectures, and courses open to students, items of medical news of local and general interest, and other subjects which, linking the undergraduate and graduate members of the University, are likely to prove of special interest and value to the senior student of medicine. In addition to the student editorial staff, there will be an advisory board consisting of members of the university staff, which should ensure continuity in general policy. This new departure will, it is hoped, enhance the society's educative influence on Glasgow medical students, and intensify the already close and cordial relations between the society and the teaching staff of the University.

## Reports of Societies

### IMMUNITY AND ELECTRIC CHARGE

At a meeting of the Royal Society of Tropical Medicine and Hygiene held at Manson House on December 13th, 1934, with Dr. WILLIAM FLETCHER, vice-president, in the chair, Major H. C. BROWN and Dr. J. C. BROOM, in a communication on "The Importance of Electric Charge in Certain Aspects of Immunity," summarized the work they had been doing during the last few years.

Major Brown and Dr. Broom first discussed the behaviour of smooth and rough bacterial variants as well as virulent and avirulent diphtheria bacilli in an electric field. They drew attention to the part played by the valency of dissolved ions in regulating the sign and degree of charge of suspended particles. By applying such principles these observers were able to control the degree of phagocytosis and of haemolysis both *in vitro* and *in vivo*. In their study of bird malaria they were able to demonstrate marked alterations in the electric charge of the red cells when the bird was recovering from an attack. This was shown to be due to a non-specific charge-reducing effect produced by adsorption on the red cell of the euglobulin fraction of the serum, which was greatly increased at this stage of the disease. In human malaria, syphilis, and more especially in kala-azar they found considerable reduction in the negative charge of the red cell. In these diseases the euglobulin content was markedly raised. They suggested that the anaemia in kala-azar and the fact that malaria and kala-azar did not often appear concurrently could be explained by the reduction in charge of the red cell making conditions favourable for phagocytosis. They advanced a theory for the rationale of malaria therapy in general paralysis on these lines, and suggested that treatment by infection with kala-azar might give far more dramatic results. They were also of opinion that the mode of action of non-specific protein shock was partly due to the euglobulin increase which occurred with a consequent reduction of the infecting bacteria. This was supported by the fact that typhoid vaccine, which was perhaps the most effective protein used, had been found by them to cause a greater charge-reducing effect on the red cells when injected into

mice than did other proteins. This was presumably due to an increase in eugobulin. Work in conjunction with Dr. G. W. M. Findlay had shown that in bird malaria there was a direct correlation between splenic activity and the degree of the reduction of charge of the red cell, and that the amount of phagocytosis of the malaria parasite by the macrophages in the spleen was also correlated with the charge of the red cell.

Sir RICKARD CHRISTOPHERS said that alteration of charge was a very important factor in the appearance of certain phenomena. Personal experience, however, had tended to emphasize the things which were at the back of charge. For instance, in the case of an organism made susceptible to phagocytosis, it might be held that it was the coating of adsorbed protein from the immune serum that reduced the charge. Again, in regard to acid haemolysis, he had at first thought this to be purely a matter of charge, the red cells adsorbing acid and simultaneously developing a positive charge which produced haemolysis when it reached a certain figure. Further observations, however, showed that when the red cells were placed in certain buffer solutions a very complicated reaction took place, and he had found that red cells might haemolyse when there was little charge or practically no charge at all. Here at least the fundamental thing was not charge. The behaviour of optochin and pneumococcus in the presence of immune serum was of great interest. It was generally agreed that the action of bacterial immune serum was in essence a deposit of protein on the organism. These quinine-like bodies were very actively adsorbed by protein, and the difference between the pneumococcus with and without immune serum might well be that in the one case the optochin was adsorbed and in the other it was not.

Miss MURIEL ROBERTSON thought the author's observations might throw light on the immunity response in *P. lewesi* and the action of that peculiar antibody "ablastin," which limited temporarily the division of trypanosomes. Professor BUXTON inquired whether the results obtained by the blotting-paper method, concerned with the adsorption of colloidal solutions and stains, were comparable with those obtained with large complicated things like bacteria and red blood corpuscles. Dr. FINDLAY said the manner in which copper killed leptospirae in the presence of immune serum was most interesting, as it was the first experimental evidence in favour of what had been noted—namely, that a chemotherapeutic drug given at the beginning of a disease had not such a powerful effect as it had later on. This enhanced action might be due to the combined effect of immune body plus drug. The question of electric charge came up with other phenomena like vital staining and sedimentation rate of red cells, but he did not know whether Major Brown and Dr. Broom had evidence on this point.

Replying to Sir Rickard Christophers, Dr. BROOM said that in reference to haemolysis they had confined their observations to a *p*H of 7.4. As regards the added effect of optochin on immune serum in pneumococcal infection, he pointed out that if bacteria or any other particles were suspended in a protein solution the bacteria become coated with protein irrespective of what it was ; if one suspended particles in a normal serum or an immune serum they were equally likely to be covered with euglobulin on the assumption that it was preferentially adsorbed. If optochin was more soluble in protein there seemed no reason why it should be more specially soluble in the immune euglobulin on the bacteria than on the normal euglobulin. In reference to Professor Buxton's question, Major BROWN said they were fully aware of the discrepancies in the results obtained with blotting paper and by cataphoresis on such large particles as bacteria and red cells: much more work would be necessary before these methods could be correlated.

At the same meeting Dr. L. W. HACKETT demonstrated the eggs of *Anopheles maculipennis*, and drew particular attention to an egg found in the Caucasus which had quite a minute float on its under surface. Nobody had yet studied this variety of mosquito, but he hoped the Russians would do so.

## BRONCHIECTASIS

At the December meeting of the Manchester Medical Society, with Dr. E. BOSDIN LEECH, president, in the chair, a discussion on "Diagnosis and Treatment of Bronchiectasis" was opened by Dr. W. BROCKBANK and Mr. A. GRAHAM BRYCE.

Dr. BROCKBANK pointed out that bronchiectasis was far more common than was generally recognized. From the classical type with cumulative fetid sputum there existed all grades down to one simulating a simple bronchitis. For instance, a dry type was recognized to-day, the symptoms being cough, not more than half an ounce of sputum, and haemoptysis, which might be repeated and profuse. There was no sign of the typical bronchiectatic sputum, constitutional symptoms were mild or absent, while on examination there might be some slight dullness, impaired breath sounds, and rales at the affected base, and in about half the cases clubbing of the fingers. In recent years the diagnosis had been rendered far easier by the use of lipiodol. The condition was bilateral in about 75 per cent. of the cases. Treatment was influenced by the fact that the cavities were surrounded by fibrous tissue, which made it impossible for them to be collapsed except by a major surgical operation. Artificial pneumothorax had in the vast majority of cases proved a failure. Treatment must necessarily vary with the different types: largely it must be medical, for the surgeon was only concerned with unilateral disease, and most cases were bilateral. It was essentially palliative. In the dry types and those unaccompanied by much expectoration a simple tolu and squill cough mixture and breathing exercises were all that were called for. Where the sputum was fairly copious measures must be taken to keep the air passages as antiseptic as possible. This could be done by prescribing creosote in capsules, in cod-liver oil, or, most valuable of all, in the form of an inhalation, best given by means of a Yeo inhaler or, when one was available, in a creosote chamber. Postural drainage was also a valuable adjunct. On this treatment patients did very well, and it was possible for the foulest sputum to lose its fetor, but treatment must be maintained indefinitely. Unilateral bronchiectasis was in suitable cases definitely curable, but surgical treatment was necessary.

Mr. GRAHAM BRYCE said that in early pulmonary fibrosis following pneumonia temporary paralysis of the phrenic nerve might be the means of preventing bronchial dilatation, and the operation had been successfully used in America with this object. When the disease was well established, but unilateral, three surgical procedures were available—collapse, drainage, and ablation. Artificial pneumothorax and phrenic evulsion had not been found satisfactory in bronchiectasis. Thoracoplasty had a field of usefulness when other measures were not available. It must be more extensive than that usually performed for pulmonary tuberculosis. Bronchoscopic aspiration was a useful palliative. It would never cure the disease. Diagnostic bronchoscopy should always be undertaken in the absence of contraindications. Cautery pneumonectomy, used largely by Evarts Graham, was a less extensive undertaking than lobectomy. Many surgeons now used the electric scalpel in preference to the actual cautery. Lobectomy was the ideal operation in unilobar cases. Two methods were in vogue—the two-stage method of Alexander and the one-stage operation of Brunn and Shenstone. The mortality had recently been greatly reduced, and the operation had established a secure place for itself in the treatment of bronchiectasis.

Dr. R. ELLIS said that in spite of the wonderful advances of surgery in the treatment of this disease the majority of cases were still left to the physician. A useful clinical classification was into latent, non-toxic, and toxic types. In the latent and non-toxic types care should be taken to prevent new pulmonary infection. Here the judicious use of anticatarrhal vaccine in the autumn was to be recommended. Bronchiectasis was usually a disease of the young and tended to develop within six months after pneumonia, whooping-cough, or

measles. Should there be delayed resolution after these infections breathing exercises or regular inhalations of $CO_2$ and oxygen were of great value in re-expanding the lung. Injections of antiseptic oily substances, such as lipiodol, gomenol, or menthol and guaiacol, had a beneficial effect in reducing fetor. They acted principally by stimulating the cough reflex, but some remained in the cavities long enough to have an antiseptic action. Intravenous injections of salvarsan and allied preparations were of the greatest value in reducing fetor due to secondary infection by spirochaetes.

## DIET AND INFECTION

At a meeting of the London Association of the Medical Women's Federation on November 27th, with Dr. E. PICKARD, the president, in the chair, Dr. HELEN MACKAY read a paper on dietetic deficiencies and susceptibility to infection, with special reference to children.

Dr. Mackay said that by long usage the two words famine and pestilence were linked together and brought to mind the toll taken by microbial diseases when a people was subjected to severe dietetic deprivation. Fortunately in Great Britain famine conditions were unknown, but an inadequate diet, week in week out, was the daily lot of very many of our people. It was difficult to assess the ill effects of any one deficiency, because in human diets deficiencies, when they occurred, were usually multiple. Dr. Mackay first discussed recent work on two deficiencies that produced well-marked changes in the body—deficiency of vitamin D and of iron. In spite of the negative findings of some workers, there was in her view sufficient evidence both from clinical and from laboratory work to make it pretty certain that a deficiency of vitamin D decreased resistance, and to suggest that in the human young the susceptibility was especially confined to respiratory infections. A chest wall softened and deformed by rickets certainly rendered much worse the prognosis in pneumonia or acute bronchitis. As to iron deficiency, babies slightly anaemic from iron deficiency showed an increased susceptibility to all the common types of infection. By the administration of iron as a routine measure at all welfare centres a very large reduction in infant morbidity could be effected. It was probable that this also held true of the mothers, and that iron therapy offered a valuable weapon in the fight against maternal morbidity and mortality. Vitamin C deficiency was rare in this country, owing to the widespread habit of giving fruit and fruit juice to children, but where it did occur in humans and in animals there was no doubt that resistance to infection was lowered. Whether vitamin B deficiency was common in this country was a debatable point, but observations made abroad showed that when beri-beri occurred among infants the incidence of infection was greatly increased. No satisfactory evidence had been supplied that any of the common respiratory diseases occurring in this country were attributable to a deficiency of vitamin A, or that vitamin A was efficacious in the treatment of any of our common microbial infections. But when the eye changes of vitamin A deficiency were manifest, increasing the vitamin A intake would reduce intercurrent illness and the death rate from infection.

Dr. Mackay said she had talked about only one mineral deficiency and several vitamin deficiencies because she had tried to confine herself to certain deficiencies whose effects we were now able to recognize. It was probable that increasing knowledge would by degrees reveal a relation between many different types of defective diet and various diseases whose aetiology was not yet fully understood. In conclusion, she said it was scarcely necessary to emphasize how impossible it was for the wife of a man on unemployment benefit or getting relief from the public assistance committee to feed her family adequately unless she had some other source of assistance. If these defective diets were, as she believed, generally associated with increased susceptibility to infection, the toll of disease preventable by an adequate diet in this country must be very high.

## PRACTICAL DIETETICS

At a meeting of the Forfarshire Medical Association on November 14th, 1934, with the president, Dr. J. D. GILRUTH, in the chair, Professor D. MURRAY LYON gave an address, illustrated by lantern slides, on some modern aspects of dietetics.

Dealing with the application of dietetics to diabetes, obesity, chronic nephritis, and epilepsy, Professor Murray Lyon pointed out that in diabetes the amount of carbohydrate was not the only factor in the diet to be considered when estimating the dose of insulin: the metabolism of fat, for example, either required insulin or interfered with its action. Other factors were the total calorie value and the fact that carbohydrate tolerance was increased by fasting and low diet. The amount of insulin needed daily was 40 per cent. greater when administered twice than when given three times a day. The ratio $\frac{\text{carbohydrate + protein + fat (grams)}}{\text{insulin}}$ was fairly constant, while the ratio $\frac{\text{carbohydrate (grams)}}{\text{insulin}}$ was very variable.

The cause of obesity was still a mystery. It had been shown that it might be produced by a relatively small increase in the diet: an addition of 24 lb. in weight in one year had been caused by an extra 200 calories a day (one tumbler of milk or a half slice of bread). In obesity the loss of weight brought about by a given reducing diet was not constant. Some obese subjects needed from 3,000 to 4,000 calories to maintain weight, others only a low diet; while 1,000 calories was usually less than a maintenance diet. Carbohydrates, fried foods, vegetable protein (as compared with animal protein), and sodium salts all tended to increase weight. In the obese diabetes was usually mild, and the glycosuria often disappeared with loss of weight. A reducing diet generally contained 1,000 to 1,100 calories; a diet of 1,000 calories would contain carbohydrate 100, fat 40, and protein 60 grams. In addition to diet, thyroid was often necessary, particularly in the later stages.

In chronic nephritis the most favourable diet was one which tended to render the urine alkaline—fruits, most vegetables, milk, and alkalis. Acid-producing foods, such as red meats, wheat, and the stronger cereals, were deleterious. As a rule a diet liberal in protein reduced renal oedema by increasing the serum protein.

With regard to epilepsy certain factors were to be noted which aggravated or precipitated attacks. These were alkalosis, water retention (which might be caused by excess of sugar and starch), and anoxaemia. Beneficial measures were a diet low in carbohydrates and rich in fats, magnesium sulphate and urea daily as dehydrating agents, and ammonium chloride as an acid producer. In conclusion, Professor Murray Lyon stressed the importance of a consideration of the water balance in all four of the conditions touched upon in his address.

At a meeting of the Cork Clinical Society, held on December 14th, 1934, Dr. C. B. PEARSON presented clinical notes of a case of multiple cystin calculi. Two small stones were passed per urethram, and these, with one from the bladder and one from the renal pelvis which were removed at operation, were shown. Radiographs and crystals prepared from the stones were demonstrated. The salient features of the cystinuria were reviewed and the treatment designed to resist calculus formation in this condition was given in detail. Dr. J. GERAGHTY (Dublin) gave an interesting demonstration of radiographs illustrating spinal lesions met with in general hospital practice. Developmental abnormalities, injuries, and tumours were shown; also osteo-arthritic and tuberculous lesions, and the condition known as osteochondritis deformans juvenalis dorsi. Finally, reference was made to the work of Schmorl on the intervertebral disk, and radiographs were shown illustrating calcification and dislocation of the nucleus pulposus.

# CORRESPONDENCE

## Osteopathy Registration Bill

SIR,—The full text of Lord Moynihan's speech in the House of Lords (*Journal*, December 22nd, 1934, p. 1163) should be studied by every thinking practitioner of medicine. It was moderate in tone, cogent in reasoning, and admirably illustrated by a broad sketch of the history of medicine. Lord Dawson supported him in an equally able speech, but in spite of their combined efforts to secure the rejection of the second reading of the Osteopaths Bill they failed to carry conviction to the majority of their fellow peers. Not only did they fail to convince, but their speeches aroused such fierce antagonism that Lord Ampthill exclaimed that they had used "language of exaggeration such as I have never heard in this House."

Speeches by other peers favourable to the Bill were given, and some related their own benign experiences at the hands of the osteopath. One said that hunting people were overwhelmingly against Lord Moynihan and in favour of the osteopath. Hunting people and a celebrated dramatist who satirized them unmercifully are thus at one. Extremes meet in admiration of that strange cult from the Occident—osteopathy. Love, even worship, of the horse is notorious among hunting people. Are they prepared to extend the virtues of osteopathy to the cure of the troubles of this noble animal? The horse has certainly a longer backbone than man, and surely would afford a larger field for the exercise of the highly cultivated tactile sense of the osteopath, and so lead to the cure of the troubles of horseflesh which so often baffle the ordinary "vet." Again, many peers are breeders of cattle and pigs. Surely they would not wish to limit the advantages of the osteopathic system to their own kind, but would naturally extend it to the speechless creatures of their shippons and sties. For, after all, pathologically speaking, the pig is but the lesser man, subject to the same diseases—acute infections, tuberculosis, anaemias, tumours, and parasites, and if allowed to live its full life and not turned into bacon at an early age would also suffer from degenerative diseases of the nervous system.

My point is that, for the sake of consistent argument, veterinary medicine and surgery are concerned in this dispute. Animal and human pathology are closely related and intertwined, and the treatment based on them similar in all respects. Everyone should be extremely critical and suspicious of any system of treatment which is limited to man unless it be that specially applicable to his distinctive prerogative—the human mind. Because man has the larger mind and is able by the faculty of speech to communicate his troubles to his fellow man it does not follow that manipulation of the spine, even by the highly cultivated tactile sense of the osteopath, can cure or even alleviate these troubles. Such cure or alleviation does occur, but not with that uniformity or consistency which would justify its recognition as a special system of treatment outside orthodox medicine. Cure or alleviation is attained by a subtle process, which the modest orthodox practitioner finds difficult to explain, but which presents no difficulties to the superb *naïveté* of the confident osteopath.

It is disconcerting to find that certain leaders of the profession are inclined to compromise or concede the claims of the osteopath. The rank and file should stand firm, remembering that some representatives of all political parties are against them on this issue. We have the satisfaction of knowing that, however imperfect may be our methods and results, we are on the right road and in touch with the actualities and realities of life, and that the progress of the past justifies medicine in her claim to resist official recognition of upstart cults. If the osteopath has anything superior to add to existing knowledge let him enter by the strait gate and join us in the march forward.

The memorandum by the Medical Secretary is an indication of the policy of the B.M.A. to resist the passage of this Bill. Every member should give that policy his or her fullest support.—I am, etc.,

Warrington, Dec. 24th, 1934. J. S. MANSON.

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SIR,—I read with very great concern, in the *Journal* of December 15th, the report of the discussion in the House of Lords on the Registration of Osteopaths Bill. The fact that the Bill has already been read a second time and referred to a select committee is a matter of grave import to our profession, and merits instant and energetic action if we are not to stand by and see the very foundations of medicine and surgery undermined. I am afraid that the medical profession has nobody to blame but itself for ever having allowed matters to drift so far as they have done. Concerted action should have surely been taken long ago to nip matters in the bud before they had reached the present serious degree of development.

The suggested registration of chiropodists was a matter of very small moment in comparison with the now suggested giving of legal status to osteopaths, as the former do not propose to deal with anything more serious than corns and paring of toe-nails, whereas the osteopaths claim to arrogate to themselves the right to extend their activities over the whole body. Now I contend that there is nothing that the osteopath can do which cannot be better done by any surgeon who cares to devote his time to the study of that particular branch of his work, and consequently there is no call whatever for the granting of legal status to the osteopath. The osteopaths' chief backers are, of course, the popular newspapers, which have always shown themselves ready and willing to extol the charlatan to the disadvantage of the medical practitioner, their reason being that the charlatan brings much grist to their mills in the shape of elaborate and expensive advertisements, whereas the medical profession brings none.

If the medical profession does not now wish to suffer a severe reverse it is up to its members, collectively and individually, to shake off their lethargy and adopt measures much more active and militant than any they have hitherto taken.—I am, etc.,

Kirk Michael, Isle of Man, Dec. 24th, 1934. E. G. FENTON.

*** A memorandum on osteopathy appears in this week's *Supplement*, and a leading article at page 20.—ED. *B.M.J.*

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## London University and its Medical Schools

SIR,—Dr. A. M. H. Gray's letter printed in your issue of December 22nd, 1934, suggests to me that one of the reasons why we never seem to get anywhere in discussions of London medical education is that we never seem to be able to discuss one thing at a time. Sir Ernest Graham-Little's general question was a fairly simple one. It was whether the London students who had completed the second M.B. had received a course of education comparable in cultural value with that received by a Cambridge poll man or a London pass B.Sc. He suggested that if the answer were "Yes" such a change of the regulations should be made as to permit the student at this point to graduate. Professor Lovatt Evans has pointed out that very slight modifications of the present rules would enable us to answer "Yes" to Sir Ernest's question.

I should differ from Dr. Gray on any question of university practice with the utmost reluctance: he knows

far more about it than I do. But surely his references to Cambridge practice and our own practice are a trifle misleading. With regard to Cambridge practice, surely it is possible and usual to graduate three years after passing an entrance arts examination ; with regard to our own practice, the degree obtainable at the price of an extra year is, I think, of honours standard. The question we were to discuss was not of honours, but of pass candidates.

The possible dangers of strange letters on brass plates are trivial and irrelevant ; the question of a London medical traffic combine is not trivial, but wholly irrelevant. The reason why I press this point is that it does seem to be fairly simple. I think any layman who reads the correspondence will conclude that the London students suffer under a remediable disadvantage as compared with Cambridge students ; calling my arguments (and, I suppose, those of Professor Lovatt Evans) sentimental and cracking jokes about a "failed M.B." will not be helpful.

If there is, as perhaps there is, some quite fundamental *administrative* objection to the reform, no London teacher is more competent to state it than Dr. Gray, but he has not yet done so. The reform of medical education is very much a question of the day, and, as the news and editorial columns of the *Journal* testify, our profession does not lack unfriendly critics ; if the authorities of our medical schools appear to be indifferent or hostile to a comparatively trifling reform it will create a bad atmosphere for the discussion of larger educational questions. No large reforms can ever be brought through without the more than passive approval of others than the clinical members of the University.—I am, etc.,

Loughton, Dec. 27th, 1934. MAJOR GREENWOOD.

## Antiseptics in Midwifery

SIR,—In the method of conducting labour advocated by Dr. Theobald there are ten features, which have now been reiterated several times in your columns, to which the avoidance of sepsis is attributed. How is it possible to assess the value of any one of these? The method as a whole may give admirable results, but is it not possible that its merits are due to only one or two of these features (among which the prohibition of digital interference has a claim to the foremost place), while the remainder receive a share of the credit which they really do nothing to deserve? A proceeding which I suspect of thus gaining credit by false pretences is one on which a good deal of emphasis is placed—namely, the use of 1 in 1,000 mercury biniodide as an antiseptic. If this time-honoured remedy is used with the expectation that it will rapidly kill streptococci, confidence in it is misplaced. My own findings (*British Medical Journal*, 1931, i, 572) are that a solution of ten or twenty times this strength is necessary for this purpose, and I know of no other results obtained by a satisfactory method of test which are in conflict with these. The use of enormous volumes of a weak antiseptic cannot compensate for its bactericidal inadequacy, unless repeated application is exerting a merely mechanical effect.

I venture to suggest that a more inquiring attitude of mind and less dogmatism would help in concerting effective measures for preventing puerperal sepsis. Dr. Theobald and others believe in antisepsis ; some obstetricians declare that antiseptics are useless. Droplet infection stands accused as a serious source of danger ; some obstetricians, including Dr. Theobald, deny its importance, and ignore precautions designed to prevent it. These are plain issues, and in their judgement on each of them one section of the profession must be wrong. When these and other beliefs come to be translated into practice an endless variety in procedure is the result. This diversity of practice is well illustrated in the employment of antiseptics. I represent elsewhere in your columns that our knowledge of the potentialities of antiseptics is in some respects confused and defective, and that their re-examination by an appropriate and standard method is desirable if their relative merits are to be assessed in easily intelligible terms. But this will be done in vain if those who use antiseptics are not prepared to divest their minds of the faith which has been handed down since 1880, when Koch proclaimed the virtues of mercury salts on the strength of experiments which were shown later to be hopelessly fallacious.—I am, etc.,

LAWRENCE P. GARROD.

Pathological Department, St. Bartholomew's Hospital, Dec. 31st, 1934.

## Cinchophen Poisoning

SIR,—The case of fatal subacute yellow atrophy after cinchophen reported by Dr. T. N. Fraser in the last issue of the *Journal*, together with others that have been reported recently, is a useful reminder of the risk attached to the use of this drug. Dr. Fraser indeed suggests that the use of cinchophen should be abandoned, or that its administration should be under better control.

If cinchophen were abandoned because of its toxicity then the use of other drugs containing a benzene ring would also have to be discontinued. Yet given in a proper manner cinchophen can be safely taken in my experience. The precautions to be taken are well established. It should be given after meals with bicarbonate of soda and with water. In the case referred to above one tablet seems to have been taken at bedtime instead of after food. There is no record of sodium bicarbonate having been given.

There is no doubt that some persons exhibit an idiosyncrasy to cinchophen. Several cases were reported by Dr. A. W. Spence and myself in 1929.[1] The fact that two of these patients were brother and sister suggested a familial idiosyncrasy. This idiosyncrasy is to be guarded against by warning the patient, not only as to the significance of gastric disturbance and vomiting, but also of loss of appetite. Loss of appetite is *the* most important symptom of intolerance. Further, the drug should not be given for more than three days in succession each week unless and until tolerance of the drug is established. In the case referred to above cinchophen was given for five days in succession. All these precautions are widely known to be necessary. In addition, I believe that if the blood uric acid is above 4 mgm. per cent. an additional margin of safety is provided. I rarely give the drug if the blood uric acid is below this figure.

There are some cases of chronic gout which can be kept under control by cinchophen and by no other means. I have experience of a number of such cases, and a knowledge of several patients who have taken the drug regularly, or with short intermissions, with great advantage for years on end. One such patient under my care at St. Bartholomew's Hospital has bad gout in her hands, and is only able to earn her living as a result of taking cinchophen. She is a woman aged 55, who has taken the drug for twelve years, and almost continuously. At one time she took more than she could tolerate, and developed symptoms ; when tested a lowered laevulose tolerance was disclosed. After stopping the drug for a time she made a good recovery, and for the sake of work continued

[1] Evans, Geoffrey, and Spence, A. W.: *Lancet*, 1929, i, 704.

to take it again, without harm to her liver and with good results to her gout.

I have thought it right to testify to the undoubted value of cinchophen in some cases of chronic gout lest the reports of occasional toxicity should give an unbalanced impression of its effects.—I am, etc.,

London, W.1, Dec. 31st, 1934. GEOFFREY EVANS.

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SIR,—It has been shown that idiosyncrasies are frequently—perhaps generally—not evident the very first time the patient comes into contact with the offending agent, but are acquired through sensitization. This applies also to cinchophen idiosyncrasy, and the importance of an allergic factor (allergotoxic effect) in the aetiology of cinchophen disease has recently been demonstrated by A. J. Quick (*Amer. Journ. Med. Sciences*, 1934, clxxxvii, 115).

It would be important to find out whether the woman who died after taking only five tablets of cinchophen, as reported by Dr. Thomas N. Fraser in the *British Medical Journal* of December 29th, 1934, had not received the drug already previously, perhaps years ago. That this may be the case seems not improbable in view of her previous rheumatic history and the fact that cinchophen forms part of many remedies which are extensively advertised as antirheumatics under various fancy names. Makers should at least be required to state the cinchophen content unmistakably on the label of such preparations.—I am, etc.,

London, W.1, Dec. 30th, 1934. F. E. LOEWY.

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## Modern Sanatorium Treatment

SIR,—The excellent paper by Dr. A. Salusbury MacNalty in the *Journal* of December 22nd, 1934 (p. 1143), on sanatorium treatment is a welcome contribution to a vexed and oft-maligned subject. I would like, as one who has had personal experience, as a patient, of two sanatoria, and also indirect acquaintance with several others, to add some comments and a suggestion.

Dr. MacNalty hits the nail on the head when, in summing up, he says: "If they [the principles of treatment which he outlines] were generally practised throughout the country we should hear less about the failure of sanatorium treatment." My experience is that the relative ineffectiveness of our present attack on tuberculosis is not due to our lack of knowledge of the theory and principles of treatment so much as to the fact that so often we simply do not put them into practice. One of the essential factors in the success of sanatorium treatment is "discipline." As Dr. MacNalty points out: "The utmost care must be taken in controlling graded exercises and work." I would add that the "controlling" is important not only in respect of those who might suffer from overdoing the exercise, but equally so in respect of those who will not do "graded exercises and work" seriously enough!

This surely is the key, if not to the whole, at least to a large part of the problem. The organization and running of so many of our sanatoria, it would seem, can best be described as slack, if not "sloppy"—even, one regrets to have to admit, that of some connected with our medical schools. So many are what the late Dr. Marcus Paterson, in his book *Shibboleths*, describes as merely "homes for tuberculous persons" instead of efficient places for treatment.

In conclusion, may I make a suggestion which might remedy this sad state of affairs? Could not all doctors who have the interests of their patients really at heart (and we trust this includes everyone in active practice) make a point of finding out if the institution to which they send their tuberculous patients is really run on efficient lines, such as those put forward by Dr. MacNalty, not only in theory, but in practice? Whether, in fact, the sanatorium in their district is such as they would have confidence in going to for treatment if they themselves had the misfortune to contract tuberculosis. If not, then they should leave no stone unturned till things are put right.—I am, etc.,

Frimley, Dec. 27th, 1934. GORDON C. GILLISON, M.B.

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## Significance of Negative Tuberculin Test

SIR,—In a paper by Dr. S. E. Tanner and Dr. A. L. McCurry, published in your issue of December 8th, 1934 (p. 1041), I am quoted as responsible for the statement that a negative tuberculin test cannot be relied upon to exclude a tuberculous infection.

I shall be grateful if you will allow me to give two extracts from the monograph referred to by these authors (Medical Research Council, Special Report Series, No. 164, 1932), and bearing on this point.

1. "The significance (of a negative response) depends both on the type of case tested and on the method and dosage employed; if, however, the most sensitive technique available is used, a negative reaction approximately excludes the presence of tuberculous infection" (p. 22).

2. "A negative tuberculin reaction, obtained by the intracutaneous method when used in the manner recommended, excludes clinical tuberculosis with a very small error, except in patients tested a few days before death" (p. 91).

—I am, etc.,

New York City, Dec. 20th, 1934. P. D'ARCY HART.

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## Stiff Fingers

SIR,—As the designer of the finger-traction splint which later went by the name of my American colleague, Baldwin, may I be allowed to support strongly Mr. Creer's condemnation (in your issue of December 29th, 1934) of the use of a pin through the finger. In my four and a half years at the Edinburgh War Hospital, and since, I have made very extensive use of the splint, both for restoring flexion to knuckles stiff in extension and for overcoming contractures of the finger flexors, especially in neglected cases of ulnar paralysis. I have found adhesive strapping and string quite adequate for all these, but certain details of application are important.

1. Zinc oxide adhesive should be used and should be applied as a loop, with the arch projecting about one inch beyond the finger-tip; strong string should be passed through the arch, and then itself looped round the adhesive and tied, the strapping being allowed to come together as the string is pulled taut. This prevents any tendency for the adhesive to be pulled away from the skin; it should be further steadied by a spiral of narrow adhesive round the digit, not a circular turn, which is likely to impair the circulation.

2. If the splint is made of rigid metal a loop of rubber tubing should be introduced between the string and the bar of splint; if the latter is made of springy metal (Baldwin's modification of my design) then the rubber is unnecessary.

It has been my experience that there is hardly any contracture which cannot with patience be overcome by this method; and, apart from bony ankylosis, only one type of stiff knuckle which cannot be flexed by it. I refer to those in which the hyperextension is so great that the lateral ligaments now run behind the centre of the joint axis. In these a preliminary tenotomy of the lateral ligaments is required before the splint can

begin to act, a point to which Mr. Hartley drew my attention some years ago.—I am, etc.,

M. FORRESTER-BROWN, M.S., M.D.Lond.

Bath, Dec. 30th, 1934.

## The Galactose Tolerance Test

SIR,—Your annotation concerning this test in the *Journal* of December 8th, 1934, prompts me to bring to the notice of those of your readers who are interested in liver function tests, and who may not have seen them, two recent articles. These appear respectively in the *Riforma Medica* of May, 1934, N. 21 ("La curva chetonemica dopo ingestione di zucchero come prova di funzionalità epatica"), by G. De Flora, from the General Medical Clinic, University of Genoa, and in the *Klinische Wochenschrift*, September 29th, 1934 ("Gallensäure-Belastungsprobe zur Leberfunktionsprüfung"), by Nakagawa and others. I do not remember to have read a description before of these tests as here set out. It is possible they have been further dealt with or criticized in later numbers of the journals mentioned (or others), not yet seen by me. At present they seem worthy of further investigation. If their value is established it will be a gain. In endeavouring to obtain information about liver function more tests than one are doubtless necessary in a given case. In the first-mentioned article it is stated that the amino-acid curve of Bufano (studied after an intravenous load of glycocoll) is the most reliable test of hepatic function, as shown by a series of results obtained at Genoa and elsewhere. In certain of the cases in which the ketonaemic curve was worked out a perfect accord with the results obtained by Bufano's test (references to his work are given) was noted.—I am, etc.,

Hove, Dec. 25th, 1934. EDWIN GOODALL.

## Anaesthesia for Tonsillectomy

SIR,—As a laryngologist I was interested in Mr. Geoffrey Morey's paper on "Tonsillectomy with Local Anaesthesia" (December 1st, 1934, p. 990). When doing tonsillectomy either in Kasr-el-Aini or in my private work, I divide my patients into the following six groups: (1) children; (2) normal adults; (3) fat females and plethoric adults; (4) the aged; (5) nervous females; (6) patients with grave organic lesions. In all these groups I have my patients prepared in the usual way as for all operations on the throat. I give, before the operation and where bleeding is feared, and again after the operation, an intramuscular injection of coagulin ciba or haemoplastin. I prefer coagulin because it is considerably cheaper than haemoplastin and quite as effective.

In Groups (1) and (2) I use *no* anaesthesia whatever and enucleate the tonsils by the guillotine. This sounds rather brutal, but the success of the operation is due to the speed at which it is done. It takes less than half a minute to remove completely both tonsils and adenoids. Bleeding is practically negligible; no blood goes into the larynx and very little is swallowed. There is no after-vomiting or headaches such as one gets with general anaesthesia. In Group (3), where vessels may have to be clamped, I prefer local anaesthesia as is described in Dr. Morey's paper, though the operation has also been done without anaesthesia. In the aged and when the tonsil is small, fibrous, or embedded, dissection is the operation of choice and local anaesthesia is undoubtedly to be preferred. In the nervous females we are driven to use general anaesthesia. In Egypt chloroform is fairly safe and is always used. When the patient is suffering from some grave organic disease coagulation by diathermy under local anaesthesia is the method of choice.—I am, etc.,

Cairo, Dec. 10th, 1934. HASSAN BEY SHAHEEN.

## Trichlorethylene

SIR,—It appears that the toxicity of trichlorethylene has been considerably overestimated. Jackson and Horzberg have recently made an exhaustive study of this drug, and have come to the conclusion that the toxic effects previously reported were due to impurities in the drug, probably benzol and carbon tetrachloride (*Anesthesia and Analgesia*, September–October, 1934, p. 203). Tissues from dogs subjected to prolonged anaesthesia with trichlorethylene showed no marked changes compared with controls, unlike the effects produced from the chemically similar drugs—chloroform and carbon tetrachloride.

Chemically pure trichlorethylene is a liquid having a pleasant fruity smell, and has given excellent results as an anaesthetic in animals. An apparatus for the inhalation of a dilute vapour in man has now been devised, and there is no doubt that its present use for the relief of trigeminal neuralgia will be greatly extended. The type of anaesthesia produced lies between that of ethyl chloride and that of di-ethyl ether, and a true analgesic state can usually be obtained.

Over one hundred patients have already been anaesthetized by this method with success in America, and it seems probable that trichlorethylene will take its place among the very small number of non-inflammable and non-explosive inhalation anaesthetics.—I am, etc.,

London, N.W.8, Dec. 31st, 1934. C. LANGTON HEWER.

## Post-Graduate Courses for Ship Surgeons

SIR,—It is to be regretted that fuller advantage is not taken of the opportunities afforded by the courses so ably organized by the Ship Surgeons' Post-Graduate Training Committee of the British Medical Association. One can hardly believe that ship surgeons do not know of these courses. Still less likely is it that men regularly employed as ship surgeons fail to recognize the necessity for post-graduate work. A much more likely explanation is that encouragement and adequate facilities are not offered to those who might otherwise avail themselves of such opportunities. A man is not likely to leave his ship for even a short course of study ashore if he has any reason to fear that by doing so he may jeopardize his chances of re-employment. Nor can he usually afford to do so if his only source of income is suspended during the interval.

For these reasons it would seem as if shipping companies, although they have within recent years immeasurably improved all their standards of comfort, convenience, and safety, have overlooked the fact that, by the same token, present-day passengers expect an increasingly high degree of proficiency in ship surgeons. It seems a logical belief that, had this changed view been properly appreciated, we should by now have seen some scheme in operation whereby, in the interests of both crew and passengers (not to speak of the ship-owners themselves), the terms of service of a ship surgeon would include periodical post-graduate instruction to keep him abreast of modern ideas and methods in all branches of his work.

There is no preparatory course of training for a ship surgeon as such. In the bad old days, when the scum of the profession drifted out to sea, none was ever thought necessary. Even to-day the novitiate ship surgeon masters the detailed routine of his job by "picking it up as he goes along." If one could measure the amount of inconvenience caused to others by this process of "picking it up" the results would be illuminating. The course in ship hygiene has gone a long way to remedy this defect, as, for example, by instruction in the sanitation and ventilation of ships, together with kindred subjects upon which the surgeon is commonly supposed (sometimes with-

out any good reason) to speak with authority. On the purely professional side the needs of the ship surgeon have been amply provided for in Part III of the course, by practical instruction in various branches of medicine and surgery. In proportion to the diversity of his work he requires practical instruction in an almost unlimited range of subjects. He may be described as a "specialist" in this respect—that his is the only branch of medical work in which a man is expected to know something about practically everything, whether it be the feeding of infants, the principles and practice of manipulative surgery, the prevailing fashion in hypnotics, or the embalmment of a corpse.

The surgeon engaged in the daily exercise of his craft needs no great effort to keep himself familiar with the finer details of technique or the intricacies of human anatomy. The otologist knows by experience how far it is necessary to assist nature in combating a mastoid infection. To the skilled orthopaedist, with all the resources of *x* rays at his command, the treatment of the most complicated fracture becomes almost second nature. The expert in tuberculosis can detect the faintest whisper of danger in a chest. The trained bacteriologist distinguishes at a glance the diphtheria bacillus from the diphtheroid. In so saying, one does not undervalue the work of these and other specialists. Familiarity breeds confidence; and it is well for the patient that this is so. But the point is, that the need for regular training and revision stands in inverse ratio to the opportunities of practice. If this be admitted no stronger argument can be adduced in favour of "refresher" courses for ship surgeons, who are expected to know something of all these specialties.

Just as the sailor is regarded as the handy man of the family, so is the ship surgeon the handy man of the medical profession. He is expected to be ready to turn his hand to anything, from the filling of a carious tooth to the relief of a strangulated hernia; from the treatment of the most exasperating *malades imaginaires* to the management of a raving lunatic. There is no sudden emergency in surgery, medicine, obstetrics, or any of their special branches, that may not fall within his province. Nor is there, as a rule, anyone to whom he can turn for confirmation in diagnosis or guidance in treatment. Added to these there is the further not insignificant difficulty that more often than not his patients are of various nationalities. The ship surgeon must be familiar also with certain medical problems that are peculiar to the sea. The identification of a faint and elusive murmur, when the reverberations of the engines fill the ship with a perpetual rumble, is scarcely less difficult than making a blood count with the corpuscles jostling each other in and out of the squares in an agitated dance. While these and similar difficulties may be largely overcome by practice, it cannot be disputed that fuller opportunities of post-graduate tuition will impart both a wider knowledge and a greater measure of confidence. The same may be said of the other professional problems of shipboard life. These include not only sea-sickness in all its puzzling manifestations, but also the way in which diseases familiar to every doctor ashore are modified or aggravated by an ocean voyage. Among these may be mentioned the perilous plight of the diabetic who has not been warned of the dangers of ketosis, and succumbs to sea-sickness. The inevitable variations in his habitual intake and assimilation of food play havoc with the delicately adjusted balance of his metabolism.

Now it is manifestly impossible for one man, even in a long lifetime, to acquire by direct personal experience the facility to deal with every contingency that may conceivably arise on board ship. The ideal ship surgeon, therefore (if he exists), is a man of ready resource, of more than ordinary common sense, and, above all, of wide general knowledge in his professional work. While it goes without saying that the greater the variety of his experience the better, the value of regular post-graduate tuition is too obvious to need further comment.—I am, etc.,

Glasgow, Dec. 19th, 1934. JOHN HILL, M.B., CH.B.

## Corporal Punishment for Girls

SIR,—Dr. R. L. Kitching deserves our thanks for his exposure of a grave social blot: it seems incredible that the Board of Education should be apparently content with its present attitude towards the corporal punishment of female children.

I feel very strongly that Dr. Kitching did not go far enough, and that the time has come when caning or birching of any child under sixteen years, whether by policemen, school teachers, or parents, should be illegal. Our sailors and soldiers, even our criminals, are now protected by law, except in the case of gross offences. Only children are, in this matter, "nobody's child," and are the victims of a form of "correction" which is a relic of barbarism.

I like to think that Dr. Kitching's letter will be read in a hundred years' time, or less, as we now read accounts of the hanging of children for larceny, and I am glad to be able to inform you that the Belfast Education Committee and its Director of Education are discouraging the casual use of the cane in all elementary schools. From my personal experience I can state that even a very large mixed school of over one thousand pupils, whose ages vary from six to nineteen years, can be conducted with perfect discipline and without any form of corporal punishment.—I am, etc.,

Belfast, Dec. 23rd, 1934. ROBERT MARSHALL.

SIR,—The letter of Dr. R. L. Kitching on the caning of girls in public elementary schools deserves more attention than the Board of Education seems inclined to give it.

A few weeks ago in a talk on epilepsy which I gave to the teachers in the Plymouth Council schools, I stated that I considered the caning of girls was wrong and ought to be stopped by the Board of Education, and I quoted a case which recently came to my notice, where a girl who was certainly threatened with epilepsy, if not a definite epileptic, had been caned because she was late for school. Believing as I do that the starting-point of epilepsy is so largely psychogenic, it seems to me obvious that caning must often convert the ordinary nervous child into an epileptic, with very dire consequences for the unfortunate child.

Caning from the teacher's point of view is a very facile remedy, whilst the dangers which might be consequent upon it have never been pointed out to these teachers. Surely this ought to have been done, and surely it ought to be within the competence of the Board to find a less dangerous remedy. I do not suppose that my experience has been unique, and now that child guidance clinics are so numerous, I would suggest to the Board that if it wishes to arrive at the truth it should make inquiries from them.

Quite apart from the reasons mentioned by Dr. Kitching, with which, I am sure, any person with experience of girls must agree, I sincerely hope that the Board will prohibit the caning of girls entirely, and will relegate the custom into the same category as shutting children up in dark cupboards. If the Board does see its way to stop the use of the cane I hope it will appreciate the fact that the use of a ruler for a similar purpose should also be included.—I am, etc.,

Plymouth, Dec. 28th, 1934. E. L. FOX, M.D.

SIR,—I was interested to observe Dr. R. L. Kitching's letter about corporal punishment in schools in the *British Medical Journal* of December 22nd, 1934 (p. 1178). Although not qualified to speak on the medical aspect of such correction I often encountered it as a school teacher in the Durham mining area, and, after my marriage, when visiting patients in my late husband's practice among the mining community.

I remember on several occasions as a teacher inquiring of girls of 12 and 13 who arrived at school crying why they were crying, and receiving the reply: "Mi father (or mother) 's just given me t'belt." Further inquiries revealed the fact that the belt was practically always applied to bare skin with the child across the knee and the undergarments drawn down. I remember, too, visiting a miner's cottage and hearing loud screams as I walked up the path. I opened the door and walked in to find the miner, with his eldest daughter, aged about 15, across his knee, vigorously applying a slipper to the girl's unprotected seat, while the mother stood complacently by. I remonstrated strongly with the couple, while the child hastily adjusted her clothing and fled sobbing into the back room. The parents, however, were adamant. The girl had taken to staying out very late at night. She had been warned several times, but had taken no notice; now she had been punished and there was an end of the matter.

It is more years than I care to remember since I lived in the mining area and times may have changed, but I think, in the face of such severity in the home, it is expecting rather too much of teachers to maintain order by other methods than corporal punishment, for a girl who is accustomed to being punished as mentioned above is not likely to be unduly hurt by two or three taps on the hand with a cane, and is still less likely to be amenable to milder methods of correction. Dr. Kitching is approaching the matter from the wrong angle. His first endeavour should be to abolish corporal punishment in the home, and it will then be time enough to abolish it at school.—I am, etc.,

Southend-on-Sea, Dec. 24th, 1934. HARRIET SMITH.

## Treatment of Drug Addiction

SIR,—In your issue of December 22nd, 1934 (p. 1149), Dr. G. Laughton Scott, in a note on the treatment of drug addiction, states that "drugs of the atropine group have been employed in countless systems, but always previously in massive doses to produce delirium and confusion, under cover of which the patient is separated from his drug." Now I submit that the "knock-out system" which he here refers to is only one of many ways in which such medicaments have been exhibited, but agree with him that it is bad practice. I maintain, moreover, that he himself places far too much reliance on medication, and my purpose in writing is to lay stress upon the paramount importance of psychological methods in the treatment of addictions.

Although lip service is frequently rendered to psychotherapy, I am struck by the fact that in practice it looms just about as large and receives about the same small proportion of attention as is given to it in Dr. Scott's note. Withdrawal of the drug and somatic detoxication is relatively easy to achieve by a variety of methods, but, as I have argued elsewhere, particularly in an article on paraldehyde addiction (*Brit. Journ. Ineb.*, xxxi, No. 3), treatment proper can hardly be said to begin until withdrawal has been accomplished. The time which, in his book, Dr. Scott considers sufficient to effect a cure is in my opinion quite inadequate. The difference of opinion appears to arise from the view one takes as to the meaning of the term "cure." If one relies upon medicinal methods supplemented by a modicum of elementary psychotherapy one can, with the skill that comes from experience, easily effect a painless withdrawal. This, however, is a very different thing from curing the addict, who is an individual with a definite neurotic mental make-up. Psychological treatment unfortunately is a long process and cannot be hurried; yet, unless it is thoroughly carried out, the weaned patient is almost certain sooner or later to relapse. He is, in fact, not "cured," and although temporarily free from craving his mental make-up and attitude to reality remain unaltered. In order to avoid the fear of being without his drug of addiction, which to the patient is a very terrible one, I always arrange with him that treatment shall be so carried out that he shall not know or be informed when the tapering ceases until a fortnight after he becomes drug-free. During the whole time of withdrawal, and for at least three months thereafter, psychological treatment is continued until the addict (who in my experience is invariably a neuropath) is reorientated. It is this, not medicines, which is the potent implement in treatment.

My earnest desire is to draw attention to the supreme importance of the psychological factor in the treatment of addiction, because I find it so generally relegated to a subordinate position and, as in Dr. Scott's note, referred to rather casually—one might even say dismissed—in a final paragraph.—I am, etc.,

Caldecote, Dec. 24th, 1934. ALFRED E. CARVER.

## Spontaneous Regression of Cancer

SIR,—I think the following case is worth recording. Mrs. T., between 60 and 70 years of age, complained to me of her tongue. There was a large ulcer on the tongue opposite a jagged tooth; the glands in the neck on both sides were much enlarged. I thought it was cancer. I sent the case to Mr. Owen, surgeon to St. Mary's Hospital. He had no doubt it was cancer. He extracted the tooth. She would not consent to any further operation and he did not urge it. He sent a small section to the pathologist of St. Mary's, who reported that it was cancer. We thought the case was hopeless. At her request I gave her a mouth wash—a weak solution of permanganate of potash. In a short time the ulcer healed, the glands of the neck disappeared, and she died seven years later of acute pneumonia. Were we all wrong in our diagnosis, or does cancer sometimes regress?—I am, etc.,

London, W.1, Dec. 22nd, 1934. DAVID ROXBURGH.

## Weil's Disease and Compensation

SIR,—In your commentary published in your issue of December 22nd, 1934, on Weil's disease and the outbreak of cases at Aberdeen, related by Professor Davidson and his colleagues, you stress its incidence in industry, and suggest its relation to occupational disease. In that connexion it is interesting to note that as far back as 1925 the dependants of a man who, working in a colliery in Lanarkshire, died from spirochaetosis icterohaemorrhagica claimed compensation. The award in his favour was contested by the employer, but when taken to the Court of Sessions the appeal was dismissed and compensation was awarded to the claimants. The case in question is cited as Raeburn *v.* Lochgelly Iron and Coal Company, Ltd. (20 B.W.C.C., 637). Thus it would appear that any industrial worker who contracts Weil's disease in the course of his employment could sustain a claim for compensation, although the disease is not scheduled under the Workmen's Compensation Act.—I am, etc.,

Cheadle Hulme, Dec. 22nd, 1934. H. ELKINGTON SMITH.

## The Duodenum and the Kirby Grip

SIR,—I have been following the correspondence on this matter with rather more than usual interest, owing to the fact that my daughter, aged 3½, distinguished herself by swallowing one of these articles on December 5th last. I was able to *x*-ray her every day (an extravagance perhaps justified by a good deal of parental anxiety), and the position was twice confirmed by barium examination. The grip remained in the stomach for three days before moving into the third part of the duodenum. It stayed in this position for five days, and then moved *back* into the second part of the duodenum. On the ninth day it had progressed once more into the third part of the duodenum, and remained there for another five days. It looked as if its chance of getting round the duodeno-jejunal flexure was becoming more and more remote, and I had more or less given up hope, when, on the fifteenth day, it was seen to be lying in the ascending colon. It was passed thirty-six hours later. I wish to take this opportunity of thanking all those of my professional colleagues who were so unstinting in their advice and help in this difficult and worrying case.—I am, etc.,

London, S.E.26, Dec. 21st, 1934. W. A. BELLAMY.

## Whither General Practice?

SIR,—This correspondence would seem to imply that general practice is suffering from a disease. Several symptoms have been complained of, and Dr. Sanguinetti (December 1st, p. 1019) has suggested a rather pessimistic prognosis, but also prescribes symptomatic treatment, which I personally endorse heartily. The question must exercise the minds of the vast majority of the profession acutely each time they see or hear the words "H.S.A.," "clinic (welfare, maternity, school, or T.B., etc.)," "public medical service," and others. May I present a few thoughts which represent the modern if youthful point of view of one who, born and bred, so to speak, in general practice, tries vainly to keep abreast of the advance of medical science whilst concurrently earning a living?

*The Diagnosis.*—This is a century of extremely rapid progress in all branches of science. Aviation is even now a necessity, industry is mechanized, and the taxi has replaced the hansom. So, analogously, the family doctor whose armamentarium was a "bedside manner," a stethoscope, a "bottle of medicine," and a "second opinion" is now out of date. The general practitioner of these days is expected to be equipped with all these *and* a sphygmomanometer, torches, a pelvimeter, weighing scales, and a host of instruments for prying into the various orifices of the human body. Nay, if he is to do diagnostic justice to his patients he must also have an *x*-ray apparatus, an intradermal syringe, and a laboratory equipped with chemical, incubating, and microscopical apparatus, to say nothing of a comprehensive knowledge of hypnosis and other psycho-analytical methods. For therapeutic success he must add electrical apparatus for administering ultra-violet and infra-red rays, diathermy, etc., and a knowledge of vitamins and minerals in dietetics, and hypodermic therapy with vaccines and chemicals. In addition to the application of his knowledge of these marvels of medical science he must acquire and practise a high degree of "clerical" ability in the compilation of his panel records, certificates, notifications, D.D.A. register, and other bureaucratic paraphernalia. The diagnosis then is plain. The individual human brain is surely incapable of assimilating and practising all this knowledge. Just as increased knowledge separated the barber-surgeons into hairdressers and doctors, so is specialism in medicine inevitable. At present the general practitioner does not accept this limitation of his function; he is not allowed to do so. Confirmation of this diagnosis is obtained by the study of the growth of the specialized clinic system and by a brief chat with the patients in the out-patient waiting room of any large general hospital.

*The Treatment.*—The first step is the reform of medical education. The pundits at present ruminating on this reform must ensure that the student has ample training to fit him for his chief function of separating the wheat from the chaff. He could be taught more about birth control, dietetics, the effect of financial or domestic worry upon human psychology, and minor surgery; and less about major operative surgery, pickled specimens, cultural bacteriology, and other details of laboratory work. In short, his training should qualify him for efficient general practice; but it must also allow him a choice of some special subject such as refraction, endocrinology, or pathology, to which he can devote more attention than his neighbour, and so acquire a high proficiency therein. He will qualify with a diploma in general practice and in his chosen specialized subject. The next step is the organization of team work among groups of general practitioners in circumscribed areas. The community is served according to its size in any one residential area by plumbers, gardeners, electricians, dentists, opticians, jewellers, etc., so should each member of the community have access to really expert diagnosis and treatment without being compelled to pay a fee incommensurate with his income, or waste valuable time seeking the "charity" of a hospital out-patient department. Groups of general practitioners educated on the lines suggested could supply such service, and would free the hospitals of a great deal of work for which they were never intended. Such organization of specialized general practitioner service would be impossible without initiation by legislative action and the consequent education of the public. The profession is adequately represented in both legislative Houses, and there is in existence a Parliamentary Medical Committee. We look to it for help.

*The Prognosis.*—It is whispered that certain political circles have a cut-and-dried scheme for foisting "State medicine" upon the country as soon as legislative power allows. This would mean the death of general practice as we know it, if we are to accept the evidence offered by students of the Russian system and the results of governmental medical services already existent in this country. It is difficult to imagine that the medical profession would accept the "socialization" of their practice, involving, as it would, the multiplication of forms and inspection, without strong protest; but it is also interesting to note that the door is already ajar, unlocked by municipal hospitals, school, welfare, maternity, and tuberculosis clinics, national health insurance, and the H.S.A. and kindred associations. Under the treatment prescribed above general practice will recover its importance as the backbone of the profession. The general practitioner will make provisional diagnosis of his patients, refer those cases which are admittedly beyond his scope to a fellow general practitioner specialist in the disease suspected, and carry out all treatment practicable in the home. There are already partnerships which work such a scheme, some which actually have central consulting rooms conducted like the American clinic; but unless there is financial partnership such co-operation between general practitioners in any one area is prevented by mistrust. Dr. B might "pinch" the patient sent to him by Dr. A for, say, a radiological opinion.

*Complications.*—The immediate threat is State medicine. It is beyond the scope of this communication to elaborate other possibilities; but it is obvious that apathy among the ranks of the profession, the free advertisement of panaceas in the excitable Press, the latitude allowed to the chemist in prescribing as opposed to dispensing, and the autocratic and unethical attitude of many salaried medical public servants all constitute a menace to convalescence and ultimate recovery.

The question "Whither General Practice?" conceives several other questions in the mind. Is it not regrettable that what has been rudely referred to as the doctor's trade union is not wholly representative of medical opinion in this kingdom? Is the policy of the British Medical Association truly representative of the views of general practitioners? If so, what channels are available for the implementing of that policy? What are the views of medical parliamentary representatives on the question, and what action do they contemplate, if any? If the health of the community is to remain the responsibility of general practitioners, should not the Ministry of Health be staffed

by men who have been through the mill, and are in sufficiently modern contact to appreciate the problems involved? General practice having such an enlarged scope and requiring so much expensive apparatus, will the necessary capital be provided in the future by commercialization, or by State subsidy, or by individual practitioners?

Until we are agreed about the answers to these and other relevant questions, and have a policy sponsored by strong medical representation in Parliament, the answer to the provocative question is inscrutably Asquithian.—I am, etc.,

Greenford, Middlesex, Dec. 19th, 1934. ALISTAIR FRENCH.

### The First Ante-natal Clinic

SIR,—I should be much obliged for the courtesy of your columns to inquire for information regarding the establishment of the first ante-natal clinic in this country. It appears that municipal clinics were first started during the early years of the war in already existing infant welfare centres, but there do not appear to be any available official records as to when the first one was opened. Some of your readers may have some information on this point, and I should be grateful if they would kindly communicate with me.—I am, etc.,

University College Hospital Medical School, Obstetric Unit, Dec. 31st, 1934. F. J. BROWNE.

## Universities and Colleges

### UNIVERSITY OF OXFORD

*Corrected Announcement*

At the congregation held on December 15th the medical degrees conferred were as follows, and not as printed in the *Journal* of December 22nd, 1934 (p. 1179):

D.M.—H. N. Bradbrooke, B. E. Tompson.

B.M.—H. S. Brodribb, P. R. Greeves, R. McDonald, T. G. Lowden.

### UNIVERSITY OF CAMBRIDGE

The following candidates have been approved at the examination indicated:

THIRD M.B.—*Part I (Surgery, Midwifery, and Gynaecology):* A. W. Abramson, D. G. Allen, H. F. Anderson, J. S. Bailey, R. C. B. Barbor, W. M. Beattie, F. R. Berridge, G. Blackburn, F. Braithwaite, W. G. Brander, S. G. Brook, N. P. Brown, J. W. D. Bull, E. J. Bury, L. I. S. Campbell, J. N. Cave, A. E. Cohen, W. T. Cooke, J. S. Cookson, D. H. Davies, J. F. Dow, E. P. H. Drake, G. D. Elphick, E. A. Evans, T. S. R. Fisher, L. R. Gardner, G. P. Goodwin, E. O'D. C. Grattan, C. U. Gregson, C. Hardwick, J. R. G. Harris, R. B. Heisch, E. D. Hoare, M. Hynes, R. F. Jarrett, W. H. H. Jebb, R. Kauntze, H. T. Laycock, N. C. Lendon, I. W. MacKichan, P. E. C. Manson-Bahr, F. R. R. Martin, E. B. Z. Masterman, J. B. C. Murdoch, J. F. Paterson, J. H. Patterson, E. E. Pochin, R. J. Porter, J. S. Richardson, G. S. Robinson, R. E. Rodgers, J. R. Rose, S. H. B. Saunders, D. S. Scott, H. S. Sharp, A. H. M. Siddons, F. A. Simmonds, J. P. Singer, F. Stansfield, J. H. Stothert, R. F. Tredgold, H. J. Wallace, J. F. L. Walley, J. G. Webb, S. R. F. Whittaker, E. G. K. Williams. *Women:* A. G. Carr, O. K. Tubby. *Part II (Principles and Practice of Physic, Pathology, and Pharmacology):* A. G. V. Aldridge, K. C. Bailey, F. R. Berridge, D. A. S. Blair, J. R. Bodington, C. H. T. Bond, J. C. Buckley, R. J. Buxton, L. I. S. Campbell, J. G. Chappell, L. A. Collins, R. H. Dale, S. M. Davidson, J. R. Dickinson, A. B. R. Finn, A. C. Fraser, H. S. H. Gilmer, E. O'D. C. Grattan, W. H. C. M. Hamilton, W. S. Haynes, C. L. Heanley, R. B. Heisch, F. G. Hinks, M. J. Ingram, W. H. H. Jebb, R. M. Jones, H. B. D. Kettlewell, A. H. Knowles, J. H. Lankester, F. D. M. Livingstone, K. Lumsden, E. B. McDowall, C. R. McLaughlin, J. W. Macmillan, J. D. Martin Jones, F. H. Masina, G. J. H. Maud, K. M. Mayall, J. H. Moseley, L. O. Mountford, J. B. C. Murdoch, N. C. Oswald, W. H. Phillips, G. D. Pirrie, A. R. Pope, M. S.-M. Rayner, J. S. Ross, S. K. Sen, J. H. Shakespeare, G. S. Steele-Perkins, Thorne B. Thorne, G. C. Tooth, P. A. Walford, E. O. Walker, G. E. Walker, H. A. Wallace, J. N. Warren, W. Warren, C. J. G. White, N. Whittaker, P. H. Willcox. *Women:* H. Drummond Robinson, D. P. Firmin.

### UNIVERSITY OF LIVERPOOL

The following medical degrees were conferred by the Vice-tions indicated:

M.D.—J. F. Burke, H. V. Corbett, A. T. Jones, W. E. J. Jones, R. W. Thomas.

FINAL M.B., CH.B.—*A. J. McCall (with honours, Class I). *1924 Regulations (Part A):* S. V. Cullen, H. W. E. Jones. *(Part B):* F. A. Frank, A. Gleave, E. L. Jones, H. H. L. Pentz, R. E. Wilson. *1929 Regulations (Part I):* A. H. Baxter, J. C. Birchall, J. G. Bogle, Agnes Y. Bowie, Eileen Chrimes, S. E. Cooke, F. W. Crook, R. E. A. Davies, †F. C. Deller, E. W. Evans, Jennet Evans, †N. M. Hancox, R. P. Harbord, E. A. K. Hoppins, F. Lanceley, F. T. Madge, Margaret J. Roberts. *(Pharmacology and General Therapeutics):* S. Ball, A. B. Bateman, J. Lawson, Henrietta Sloan. *(Part II):* P. A. Dixon, T. Laithwaite, Moira Murray, Joan Watts *(Part III):* A. O. Karsteadt, F. A. Lomax, S. Shulman, A. Speight, S. L. Strange, R. P. Tong, J. K. B. Waddington, M. M. Wallis, Margaret C. Winter.

M.CH.ORTH.—W. S. Creer, N. S. Gunning, E. C. B. Jones, J. B. Reid, N. W. Roberts, D. Wainwright.

D.P.H.—E. Taylor.

DIPLOMA IN TROPICAL MEDICINE.—S. K. Appleton, S. O. Awoliyi, J. J. A. Cantin, S. W. Cooper, P. C. Cosgrove, R. Y. Dunlop, ‡A. A. Gibbons, S. L. Kallianpurkar, D. C. M. Macpherson, Z. Z. Nyi, W. E. Strangway, T. T. Wu.

* Distinction in surgery, and obstetrics and gynaecology.
† Distinction in pharmacology and general therapeutics.
‡ Recommended for the Milne Medal.

### UNIVERSITY OF DURHAM

At a convocation of Durham University held at the College of Medicine on December 22nd, 1934, with Sir Robert Bolam, the Pro-Vice-Chancellor, presiding, the following medical degrees were conferred:

M.B., B.S.—G. A. Baker, G. Darke, Ethel P. Johnson, T. L. Kelly, J. L. Murray, S. P. Rosengweig, R. C. Thomson.

### VICTORIA UNIVERSITY OF MANCHESTER

At a special meeting of the Court of Governors held on December 20th, 1934, Dr. J. S. B. Stopford, F.R.S., professor of anatomy in the University, was appointed Vice-Chancellor until permanent arrangements can be made to fill the vacancy caused by the resignation of Sir Walter Moberly on his appointment as chairman of the Government University Grants Committee.

### UNIVERSITY OF SHEFFIELD

The following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—*Part II:* J. S. Hollingworth, H. J. Lee, Evelyn W. C. D. Pettigrew. *Part I:* C. Axinn (with distinction in forensic medicine), L. A. Bull, W. Ellis, J. C. Jolly, R. Scott.

The following medical degrees were conferred by the Vice-Chancellor at a special degree congregation held on December 22nd, 1934:

M.B., CH.B.—J. S. Tollingworth, H. J. Lee, Evelyn W. C. D. Pettigrew.

## Medico-Legal

### A BROKEN HYPODERMIC SYRINGE

*Action for Alleged Negligence*

In the King's Bench Division before Mr. Justice du Parcq from December 17th to 19th, 1934, an action was heard for damages for alleged negligence against Dr. Noah Pines of Whitechapel. It was brought by Mrs. Rebecca Gerber and her husband, who alleged that in the course of a hypodermic injection for the treatment of rheumatism the defendant left part of a broken needle in the body of the woman plaintiff. For the defendant it was contended that the breaking of the needle was due to a sudden muscular spasm of the patient and that no skill on the doctor's part could have prevented the portion of needle from entering.

It was stated that Dr. Pines last summer gave Mrs. Gerber six injections without mishap. On the seventh injection, in the buttock, she felt great pain, and asked whether he had not broken a needle in the flesh. He denied this, but three days later acknowledged that it must have happened. On his advice Mrs. Gerber was taken to the Middlesex Hospital, where a two-inch needle was extracted from the gluteus maximus. She was in hospital for fifteen days, and had suffered pain and been unable to do housework since. Dr. David Hammand Fraser said that he examined Mrs. Gerber on November 13th; she was depressed and ill, walked with a limp, and her symptoms were those of sciatica. This witness also said that there was always a danger of needle breakage; he always warned patients not to give a sudden jerk, and he never pushed the needle in up to the hilt.

Dr. Pines, who said that he graduated M.B.Kiefl (Hnrs.) in 1911, and held the L.M.S.S.A. of the Society of Apothecaries

of London, gave evidence that on making the injection he left a quarter-inch of needle exposed, but the patient's spasm caused it to break and it disappeared immediately. His reason for not informing the patient at once was that he had been told by her husband not unduly to disturb her on account of her nervous condition. He asked her to go home and get in touch with him if the pain became worse, and he tried to communicate with the husband, but some mistake was made about the address. Mr. A. R. Banham, F.R.C.S., spoke to the *x*-ray appearance, and said that in a less excitable person than Mrs. Gerber it might have been well to let the needle remain embedded in the muscle as it was. Neither the needle nor the subsequent operation was near the sciatic nerve. Mr. Russell John Howard, F.R.C.S., also could find no indication of sciatica.

In giving judgement, Mr. Justice du Parcq said that there was no negligence in the performance of the injection, but when a doctor left any foreign body in a patient it was his duty, apart from some obvious exceptions, to tell the patient at once. Dr. Pines had said—and he was justified by the result—that he believed the needle would remain fixed in the muscle. But it seemed to the judge that there was less risk in telling the patient, notwithstanding her nervous condition, than in sending her home by omnibus, where the jolting might move the needle from its position. Damages must be small. Apart from small items, such as payment for the last injection (7s. 6d.) and taxi-cab fares, there was the patient's pain and suffering on the two or three days before it was revealed that the needle was in her body. The operation might have taken place two days earlier, and she was entitled to nominal damages for that breach. A fair amount to award was five guineas. He gave judgement accordingly, but without costs, for the plaintiffs, because, he said, a great part of their case had failed.

# Obituary

## BASIL LAVER, M.S., F.R.C.S.

Surgeon to the Northampton General Hospital

We regret to announce the death on December 28th of Mr. Basil Laver, at the early age of 40, after a long illness. He was one of the outstanding students of his time at Guy's Hospital, and during the past eight years had practised with much success as a surgeon in Northampton.

Basil Leslie Laver, son of Harry Laver of Middelburg, Transvaal, was born in South Africa, and was educated at Bedford Modern School. When the war broke out he had already entered at Guy's Hospital. He first joined the Artists' Rifles, and then served with a commission in the R.F.A. for three years, becoming adjutant and temporary major. He qualified M.R.C.S. and L.R.C.P. in 1922, and in the following year graduated M.B., B.S. Lond. After holding several house appointments at Guy's he won the Arthur Durham travelling studentship, and later acted as surgical registrar and assistant surgical tutor in the medical school. He obtained the F.R.C.S. in 1925, and the M.S. in 1926. At Northampton he was elected surgeon to the General Hospital, and he was also consulting surgeon to the Stamford and Rutland General Infirmary. Mr. Laver had been an active worker for the British Medical Association, and served as honorary secretary of the Northampton Division in 1927-9.

We are indebted to Dr. J. G. LYON BROWN for the following appreciation: On behalf of myself and my practitioner colleagues may I be allowed to pay a brief tribute to the memory of my friend, Basil Laver. His death robs not only Northampton of one of its most distinguished medical men, but also many others of a friend whose sincerity and steadfastness will keep his memory green. I was always struck with his dynamic energy and capacity for work, his acute inquisitiveness of mind, and his absolute intolerance of shibboleths of medicine. He would never accept anything until he had worked it out, dissected by argument, and proved a statement or condition. He was always helpful in suggestion and willing to listen to any argument, for or against, kind, and courteous in manner and actions. He was the possessor of an orderly, logical, and relevant mind. Apart from his loss as an excellent surgeon, his passing leaves one with a sense of deep personal bereavement.

## J. C. LOUGHRIDGE, JUN., M.B., B.CH.

Dispensary Medical Officer, Templepatrick

It is with great regret that we record the death of Dr. J. C. Loughridge, jun., of Templepatrick, Co. Antrim, as the result of a tragic motor accident on December 22nd, 1934, when he was returning home after doing some Christmas shopping. He was the only son of Dr. John Carson Loughridge of Whitewell, Belfast, one of the most esteemed members of Council of the British Medical Association. Like his father, he was of a most unassuming nature, and extremely popular with his professional brethren in and around Belfast. He was beloved of his patients for his professional skill and his personal interest in their welfare. No effort was too great a trouble to Jack Loughridge to alleviate suffering, and his patients realize that they have lost not only a skilled physician but also a personal friend.

Dr. Loughridge was a graduate of Queen's University, Belfast, where he qualified in 1917. He received a temporary commission in the R.A.M.C. during the war, and took up private practice on the conclusion of hostilities. In 1924 he was appointed dispensary medical officer at Templepatrick, and it was within a mile of his home that the accident occurred. During the past ten years he had proved a most successful practitioner, and had endeared himself to his patients throughout his district. He was an active Freemason and a keen supporter of outdoor sports, particularly football, golf, and tennis. A Rugby football match rarely found him an absentee, and motor racing attracted his interest in the summer months.

Dr. Loughridge married Winifred, a daughter of the Rev. Robert Wallace, about eight years ago, by whom he is survived, with two young children. With them and with his father deep sympathy is felt in their tragic bereavement.

We regret to record the death, in Melbourne, Australia, on October 23rd, 1934, of Dr. HOWARD PERCY WARD, at the age of 71. He received his medical education at King's College, London, where he was Sambrooke exhibitioner and Warneford scholar, and obtained the diploma of M.R.C.S. Eng. and the L.S.A. in 1887. He graduated M.B.Lond. in 1894. After holding the appointments of house-physician and house-surgeon at King's College Hospital, he went to Southampton as house-surgeon to the Royal South Hants Infirmary. In his subsequent practice in Southampton he retained his close connexion with that institution, to which, on retirement from the active staff, he was elected consulting physician. He had been a member of the British Medical Association since 1903, and was an Associate of King's College.

Dr. CHARLES GORDON LENNOX SKINNER of Rhôs-on-Sea, North Wales, and formerly of Harpurhey, Manchester, died on December 23rd, 1934, at the age of 83. He was the last surviving son of James Skinner of Drumin, Glenlivet, Banffshire. After studying medicine at the University of Aberdeen he graduated M.B. and C.M. in 1873, and proceeded to the M.D. degree in 1877. Dr. Skinner, who was a justice of the peace for the city of Manchester and an honorary life member of the British Red Cross Society, had been a member of the British Medical Association for fifty years. After retirement from practice he joined the North Carnarvon and Anglesey Division, and was elected an associate member of the Manchester Division. The funeral took place at Christ Church, Hurpurhey, on December 26th.

# Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

The Royal Assent was signified to the Special Areas (Development and Improvement) Act (formerly the Depressed Areas, etc., Bill) before Parliament adjourned on December 21st. The House of Lords will reassemble on January 29th and the House of Commons on January 28th unless the public interest requires an earlier meeting. The Matrimonial Causes (Amended Procedure) Bill and the Matrimonial Causes (Procedure in Suits for Nullity) Bill are down for second reading in the Lords on January 29th. Both are introduced by Lord Merrivale. No date is named for the committee stage of the Registration and Regulation of Osteopaths Bill in the Lords.

The Ministry of Health Provisional Order (Guisborough Joint Small-pox Hospital District) Bill was read a second time in the Commons on December 21st.

The Educational Endowments (Scotland) Bill was reported to and read a third time by the House of Commons on December 20th.

Votes for Unemployment Assistance and Distressed Areas will be discussed in the House of Commons on January 28th and 29th. January 30th and 31st are reserved for the second reading of the Government's Housing Bill (England and Wales), which was presented on December 20th.

Arrangements for the celebration of the twenty-fifth anniversary of the King's Accession to the Throne were outlined by Mr. Baldwin in the House of Commons on December 21st. They will begin with a Thanksgiving Service at St. Paul's Cathedral on May 6th.

## Unemployment Assistance: Resumed Discussion

In the House of Commons, on December 18th, debate was resumed on the draft regulations to govern the determination of assistance to the able-bodied unemployed from the Unemployment Assistance Board. Mr. JAMES REID said the scales and regulations for adults were in every case higher than the scale put forward by the British Medical Association. Mr. MANDER, referring to the B.M.A. scale, asked what better test they could apply than exact knowledge, worked out by experts, of the amount required to maintain a person on a decent level of subsistence. The British Medical Association understated rather than overstated the cost. It seemed to him to be a very severe criticism of the regulations that there was a gap of 1s. 8d. between the regulations and the B.M.A. scale, and in the case of five children a difference of 8s. 3d. That alone was a ground for rejecting the regulations. Miss RATHBONE said that Mr. Oliver Stanley had tried to belittle the figures presented by the Children's Minimum Committee by suggesting that it was not quite fair to pick out the best bits of the different estimates and, after putting them together, to point out that the Board's scales by comparison showed a deficiency. That was not what the Children's Minimum Committee had done. The latter took the B.M.A. scale for food, not because it was the highest scale, but because it was the most authoritative and because its findings were, in substance, endorsed by the Minister of Health's own committee on nutrition. If the Minister disputed the authority of the joint British Medical Association and Merseyside surveys would he tell the House on what the Board's own scales were founded? Her own impression was that all these scientific scales tended rather to underestimate than overestimate needs.

After further discussion the debate was adjourned.

On December 19th Mr. HUDSON, replying for the Ministry, said the figure quoted for the typical family of a man, his wife, and three children in the document circulated by the Children's Minimum Committee was 21s. 8d., although 20s. was the B.M.A.'s figure. This document suggested that free milk and meals should be disregarded. His Department had decided that they should be. In mining areas all ordinary deductions from wages of insurance contributions, hospitals, and so on would be disregarded in assessing means. So would money received by persons who got maternity benefit, or money grants for extra nourishment from the tuberculosis services, or similar sums. School meals provided on doctors' orders, free milk, cod-liver oil, etc., would also be disregarded. Mr. Hudson explained that last July the number of persons in receipt of transitional benefit was 760,000—480,000 men with dependants, 455,000 wives, and 770,000 children. The average family in this country had 1½ children. The biggest group of all among families in receipt of benefit was that of parents with one child, which numbered 120,000. The next biggest—parents with two children—numbered 90,000. There were 155,000 married couples without any children, and the number of families in receipt of transitional payment with seven and eight children represented a negligible proportion.

### *The Medical Point of View*

Sir FRANCIS FREMANTLE said he was glad to have an opportunity, from the point of view of the medical profession, and medical officers of health especially, of saying that, in spite of the partisan views held and given voice to for and against these regulations, there was no question that this was a great measure, dealing with a very great problem. The scientific method of setting out an analysis with the different factors provided a machine capable of very great development for the future. Constant references had been made to the scale of the British Medical Association and other scales, and general figures had been given, which were 5s. to 6s. for a man and from 4s. to 5s. for a woman, according to the particular scale adopted. As regards growing children the regulations made a difference, but he thought this was a case where a little further elaboration was needed. This was one of the most difficult points raised by the British Medical Association, and it was one about which the medical officers of health felt very strongly. He was at a meeting of the Council of Health Education at which Professor Nixon gave a very important and instructive address on the question of nutrition. It was surprising to learn what a very large amount of food was required by infants in comparison with their weight. In the ordinary way the actual requirements of an infant was fifty calories per pound of body weight, while the adult required only twenty. The actual amount allowed in the scale for cost of food was 2s. 6d. for an infant, or only about half as much as was provided for the child between 12 and 14—namely, 4s. 6d. The growing child's requirements were really heavy, and it was a serious question whether the scale, if it was rigidly followed, would provide a sufficient allowance. As regards the cost of food, he did not think it was sufficient, but there were other overhead expenses which did not reach anything like the same amount in the case of a child. One could not generalize on the subject, but the criticism that was generally made by those who had gone into this question from the point of view of the British Medical Association and the medical officers of health was that, while the scale which had been laid down was on the whole a generous one, and met the case of a family consisting of a man, his wife, and two children, yet where there were more children it tended to be rather below the standard required according to the British Medical Association. There were, of course, different standards. The Children's Minimum Committee had done splendid work in this direction, but its report did not mention the scale laid down by the equally, and perhaps more, efficient advisory committee on nutrition appointed by the Minister of Health. Mr. Paling had suggested that the Minister had hurriedly appointed that committee after the British Medical Association had reported, but, as a matter of fact, the advisory committee was originally appointed in 1931. It was a standing advisory committee. It put forward a lower scale, considering that 3,000 calories were enough for a man, as compared with the British Medical Association's figure of 3,400. There being this discrepancy, the two committees met, and the result of the conference was shown clearly in the report of the Ministry of Health last year. These two bodies of men, consisting of colleagues who knew one another well and respected each other's opinions, discussed the difference between the findings, and decided that the all-round average for the entire population, or for large mixed groups of people, at the present time was about 3,000 calories a day, against the British Medical Association's figure of 3,400, and that figure, they said, could be safely employed for the calculation of mass requirements, but would not necessarily be applicable to individuals or single families, whose condition might require separate treatment.

Miss RATHBONE asked if it was not the case that the unemployed household in which the man was actively seeking work was rather in the position contemplated by the scale of the British Medical Association than that contemplated by the advisory committee. Was it not explained at the conference that there was no real difference between them, but that the British Medical Association's scale was more apposite to the unemployed man who was seeking work?

Sir FRANCIS FREMANTLE replied that he thought the actual conclusion was that the advisory committee's figure of 3,000 calories was right for a man who was not engaged in work at the time, and that the British Medical Association's figure of 3,400 was right for those who were actually employed. That was, roughly, the division between the scales as summed up at the conference. The scale which the House was now discussing was within the general requirements for the population. It might need revision in certain directions, especially as regards the children of larger families. The larger families were still part of the problem, but that was no reason why they should not be dealt with, and he hoped they would hear from the Government spokesman in regard to the possibility or probability of revision of these regulations. It was left vague in Section 52 of the Act: apparently the Board was to report to the Minister from time to time. How soon was the first time going to be? He hoped that members would not expect it to be as soon as had been suggested; three months would be absurd. At present they could only agree that these were proper scales with which to begin, and that they were going to be adjusted in accordance with special circumstances and would be open to revision. Another point that the British Medical Association particularly wanted to have recognized was the provision in the regulations to meet large families in the economic sense of making a reduction for quantity in payment per head. It was reasonable to make some such suggestion. When the family was large there should be a reduction in the allowance per head when the family was living within its income, but if the family was living on the absolute minimum there was very little reduction possible. He asked members not to rely so very closely on these actual determinations of food values in calories. At the conference which had been referred to one of the professors poured cold water on the whole question of calories, and showed how little they could be trusted. They knew that a great deal depended on the quality of the food and on digestion, and so on, and it was difficult to lay down actual figures. He suspected these standard diets, but it was the only way in which they could arrive at some systematic arrangement for feeding people. What co-operation, Sir Francis continued, was there going to be between the Board of Education, the Ministry of Health, and the Unemployment Assistance Board in the actual working out of these tests? There were various ways in which one Government Department could help another. For instance, if they were really looking about for cases of malnutrition in an early stage they wanted the medical officers of the Board of Education to apprise the officials of the Unemployment Assistance Board of families which seemed to them to require assistance. In the same way, were the officials of the employment exchanges going to be asked to draw the attention of the Board to cases which seemed to require need? He only made the suggestion as being a later development. If they compared the conditions in this country with those in any other, and the advance made in this country with conditions in the past, they had every reason to feel that we were doing the right thing.

Two opposition amendments having been rejected, the draft regulations were approved by 258 to 61.

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*Number of Vaccination Insertions.*—Mr. GROVES asked, on December 18th, whether the public vaccinator of Walsall, upon receipt of 1s., vaccinated with one mark only, but vaccinated with three other marks freely; and whether, in view of the fact that instructions were given after the last Royal Commission to vaccinate with one mark, the Minister of Health would instruct the vaccinator in question to stop vaccination with four marks. Sir HILTON YOUNG said he had no knowledge of the circumstances alleged. No such instructions had been given to public vaccinators. The relevant instruction in the Third Schedule to the Vaccination Order, 1930, provided that while ordinarily the public vaccinator should vaccinate in one insertion he might, if he considered it necessary, increase the number of insertions in cases in which he or the vaccinee desired that additional protection should be obtained. It rested with the local authority to see that a public vaccinator observed the terms of his contract.

*Refuse Incineration in Trenches.*—Sir Francis Fremantle was informed, on December 20th by Sir HILTON YOUNG, that the Brighton system of disposal of refuse by incineration in trenches, known as the "feoenix," had been inspected twice by officers of the Ministry, in 1926 and in 1933. No local authority had so far applied for sanction to a loan for installing the system.

*Physical Training for Girls.*—Sir HILTON YOUNG told Mr. Joel, on December 20th, that his attention had been called to the statement of his Chief Medical Officer, emphasizing the need for the national development of physical training, culture, and guidance for girls of all classes in England and Wales. Action in many forms in the direction indicated was now taken by public authorities and voluntary bodies, with the Minister's encouragement.

*Death Penalty for Women.*—Sir JOHN GILMOUR refused, on December 21st, to consider the introduction of legislation abolishing the death penalty for women. He deplored that certain newspapers made the carrying out of a sentence of death the occasion for sensational "copy," but commented on the difficulty of dealing by legislation with offences against good taste.

*Prison Regulations.*—Sir GODFREY COLLINS announced that he was dealing with the whole code of prison regulations in Scotland. He had ordered that restraint by leg-chains was not to be employed in future, and should be discontinued in the case of a man under punishment at Peterhead prison for gaol breaking.

*Yellow Fever in Gambia.*—Mr. DAVID GRENFELL asked Sir Philip Cunliffe-Lister, on December 21st, whether the curfew and quarantine regulations, prohibition of public worship, and closing of schools in Gambia Colony on account of yellow fever had been explained to the local population. Sir PHILIP CUNLIFFE-LISTER said statements were issued by the senior medical officer explaining the quarantine and other measures which the Government of the Gambia decided to enforce at Bathurst. He had not received from the Governor copies of the orders issued, but the Governor had Sir Philip's fullest support in taking prompt and drastic action to deal with the emergency.

*Consultative Councils on Health in Scotland.*—In a reply to Dr. F. Llewellyn-Jones, on December 21st, Sir GODFREY COLLINS said that by Order in Council dated December 20th, 1919, four Consultative Councils were established under Section 5 of the Scottish Board of Health Act, 1919, as follows: (1) medical and allied services, (2) national health insurance (approved societies' work); (3) local health administration and general health questions; (4) Highlands and Islands. With the exception of the Consultative Council for the Highlands and Islands, the constitution of which was under consideration by the Department of Health for Scotland, all these councils still functioned. Sir Godfrey gave the following table of the membership and meetings of the councils:

| Consultative Council | Number of Members | Number of Meetings of Council and Subcommittees | | |
|---|---|---|---|---|
| | | 1932 | 1933 | 1934 |
| (1) ... ... | 20 | 8 | 1 | — |
| (2) ... ... | 15 | 2 | 1 | 1 |
| (3) ... ... | 16 | 5 | — | 4 |
| (4) ... .. | 14 | — | — | — |

In an earlier reply Mr. SHAKESPEARE told Dr. Llewellyn-Jones that the Consultative Council on National Health Insurance (Approved Societies' Work) for England met once in 1933. Three other councils appointed under the Ministry of Health Act, 1919, did not now function.

*Corporal Punishment.*—In 1933 forty-four adult offenders were sentenced to corporal punishment at assizes or quarter sessions in England and Wales, compared with sixty-three in 1932. Of those sentenced in 1933, twenty-one (four under 21 years) were sentenced to punishment with the "cat," the others with the birch.

# Medical News

A sessional meeting of the Royal Sanitary Institute will be held at Guildford on Friday, January 18th, 1935. At 5 p.m. the Mayor will receive members in the Guildhall, and at 5.45 p.m. there will be discussions on "What is Scarlet Fever?" to be opened by Dr. F. A. Belam; and on "The Waters of Guildford, Pure and Impure," to be opened by Mr. J. W. Hipwood.

At an evening meeting of the Pharmaceutical Society of Great Britain on Tuesday, January 8th, at 17, Bloomsbury Square, W.C., a lecture, on "Vocational Guidance," will be given by Mr. C. A. Oakley, B.Sc., Scottish divisional director of the National Institute of Industrial Psychology. The chair will be taken by the president at 8.30 p.m., and members are invited to bring friends. Refreshments will be served after the meeting.

The Fellowship of Medicine (1, Wimpole Street, W.) announces that a lecture-demonstration on functional dyspepsia will be given at 11, Chandos Street, W., on January 11th, at 4.15 p.m. Other demonstrations this month include two especially suitable for M.R.C.P. candidates: the first on the fundus oculi, on January 15th, at 8.30 p.m., at the in-patient department (Gloucester Gate), of the West End Hospital for Nervous Diseases; the second on electrocardiograms: the interpretation of tracings, at 11, Chandos Street, on January 23rd, at 8.30 p.m. A series of pathological demonstrations will be given on Thursdays, at 3 p.m., at the Wellcome Museum of Medical Science, Euston Road—those in January will be: some modern aspects of malaria, on the 17th; electrocardiograms, on the 24th; and examples of Bright's disease, on the 31st. Surgical tutorial classes will be given on Tuesday and Thursday evenings, at the National Temperance Hospital, at 8 p.m., beginning on January 15th. Special courses include: cardiology, at the National Hospital for Diseases of the Heart, January 14th to 26th (all day); urology, at St. Peter's Hospital, January 21st to February 2nd (all day); dermatology, at St. John's Hospital, January 28th to February 28th (afternoons); manipulative surgery on four successive afternoons, at 5.15 p.m., from January 29th, at 11, Chandos Street; and a week-end course in heart and lungs, at the Royal Chest Hospital, January 19th and 20th.

The twenty-first annual conference of the National Association for the Prevention of Tuberculosis will be held at Southport on June 27th, 28th, and 29th, 1935. The main subject for discussion will be "The Responsibility of the Nation towards the Child in Respect of Tuberculosis." Further particulars will be issued later.

The annual dinner of the London Jewish Hospital Medical Society was held at the Trocadero Restaurant on December 9th, under the chairmanship of Dr. A. Goodman Levy. The guest of honour was Sir Humphry Rolleston, whose health was proposed by Dr. J. Burnford. Mrs. Dugdale, in proposing the toast of "The London Jewish Hospital," said that there was something psychological in that institution which brought a kind of healing to the soul which was the real basis of the care and the cure of the body. Haham Dr. Gaster, in reply, after speaking of the respect in which doctors had been held by the Jewish people from olden times, paid a tribute to Sir Humphry Rolleston, who had from the inception of the Jewish Hospital—when the foundation stone was laid—shown a deep interest in it and had given them every possible help. Alderman A. Kershaw, who proposed the toast of "The London Jewish Hospital Medical Society and its President," said that a society such as theirs justified itself, for it made it its business to study the difference that existed among their own people with a view to improving the medical attention of such people. They also welcomed the help which the society gave to those members of its profession who had suffered from the persecutions in Germany. Dr. Goodman Levy read a letter from the president, Professor Charles Singer, regretting his absence and wishing the function success. There was little peculiarly Jewish in medicine, said Dr. Levy, so the scientific aspect of the society was limited. From a Jewish social aspect, however, it served an obvious purpose in bringing a large number of Jewish medical men together. The Jewish Medical and Dental Assistance Council, which had done good work in collecting funds for the assistance of German medical and dental practitioners, was an offshoot of that society.

The Bath Royal United Hospital, which serves that city and portions of the counties of Somerset, Gloucester, and Wilts, has just received a legacy of £6,000 under somewhat unusual circumstances. Some years ago a visitor, Mrs. Dunscomb Bridge, derived much benefit from a course of the mineral water treatment at Bath, and in gratitude for this her husband, Major-General T. F. Dunscomb Bridge, made this bequest to the hospital.

The Lord Chancellor has appointed Dr. W. Watkins-Pitchford a justice of the peace for the borough of Bridgnorth.

Dr. Alfred E. Carver has decided not to take up the appointment of medical director to the Cassel Hospital for Functional Nervous Disorders, announced in the *British Medical Journal* of December 1st, 1934, but to continue in his position at Caldecote Hall, Nuneaton.

Dr. Alan Moncreiff has joined the editorial staff of the *Practitioner* as joint associate editor.

The issue of the *Nederlandsch Tijdschrift voor Geneeskunde* for December 15th, 1934, contains the proceedings of the Congress of the Far Eastern Association for Tropical Medicine, held from October 2nd to 9th, at Nanking, which was the first international medical congress to be held in China.

The issue of the *Dermatologische Wochenschrift* for December 8th, 1934, is dedicated to the co-editor, Professor Johann Heinrich Rille, on the occasion of his seventieth birthday.

Since the passing of the law in Germany on November 24th, 1933, 111 sterilizations have taken place in the Moabit prison in Berlin.

# Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, B.M.A. House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

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## QUERIES AND ANSWERS

### *Post-Herpetic Neuralgia*

Dr. H. H. PINKERTON (Busby, nr. Glasgow) writes: On page 1185 of the *Journal* of December 22nd, 1934, Dr. H. Lewis-Philipps describes the after-pain of herpes in a patient of 70, and asks for any suggestions as to treatment and relief of pain. I had this summer a similar case in an elderly lady who had herpes of the leg and foot. The

rash cleared up readily enough in two to three weeks, but pain was persistent. I had warned her of the probability of this, and I sent her to have diathermy at the hands of a competent physiotherapeutist. The treatment was very successful after a few applications. I shall be glad if the same measure were to prove helpful in Dr. Lewis-Philipps's case.

Dr. GEORGE L. FOSS (Bristol) writes: May I suggest that Dr. Lewis-Philipps tries autohaemotherapy for his case of post-herpetic neuralgia. The technique is as follows: 10 c.cm. of blood is withdrawn from any large vein, preferably the median cubital, using a needle of large bore. The syringe should be washed through, if sterilized with spirit, with 5 per cent. solution of sodium citrate or even boiled water. This blood is then injected immediately into the outer quadrant of the buttock deep into the gluteus muscle. The dose may be increased up to 20 c.cm. in intervals of four days. It may be necessary to give six or more injections. Given early, autohaemotherapy, in my opinion, is specific for herpes zoster, preventing any pain in early cases and certainly worth a trial in long-standing ones.

### Aural Diphtheria

Dr. F. TEMPLE GREY (London, E.1) writes in answer to Dr. W. A. Mayne (*Journal*, December 22nd, p. 1185): This is a well-recognized condition. Some account of extrafaucial diphtheria is to be found in the December issue of *Public Health*. I recommend local applications of antitoxin plus injections if there are constitutional signs or symptoms.

### Income Tax

#### *Private Use of Car*

"K. C." points out that the general car expenses—for example, garage, tax, and insurance—have to be incurred, whether he uses the car privately or not, and suggests that in consequence only the running costs of private use should be disallowed.

*** It may be taken that, even though the facts are as stated and the car essential for professional use, the *pro rata* division of the general expenses cannot be successfully resisted. The Income Tax Acts do not specifically deal with the point, but the language used in the case of general expenses, and such special items as "rent," which also causes private and professional expenses, would render an appeal hopeless.

#### *Costs in Setting up Practice*

"A. K." started a new practice as from January 1st. What can he claim towards equipment of surgery and waiting room, including appliances and drugs, cost of new car, and garage?

*** The cost of setting up a practice is capital expenditure and not allowable for income tax purposes. This does not, however, extend to saleable stock such as drugs or materials used in the course of the year. "A. K." is therefore entitled to regard as an expense the cost of drugs, bandages, lint, etc., purchased at the beginning of, or during, the year, but must deduct therefrom the value of the stock on hand at the end of the year.

## LETTERS, NOTES, ETC.

### Calcium, Claudication, and Cinchophen

SIR JAMES BARR writes from Hindhead: I am much interested in the case of subacute yellow atrophy after cinchophen, recorded in your issue of December 29th, 1934, by Dr. T. N. Fraser, chiefly on account of the fatal issue after comparatively small doses. When my wife and I were having a tour in Scotland in 1923 we saw our friends Sir X and Lady Y at Tibby Shields, St. Mary's Loch. He was suffering from intermittent claudication of the arteries of both legs, but the intermission is in sufficient blood supply to the muscles: not in the size of the calcareous arteries. He could not walk a few hundred yards without frequent haltings, and was rather pleased to show the radiograms of his arteries. He had been under the care of the most popular physician in London, who ordered a milk diet, fifteen grains of atophan (cinchophen) thrice daily; this was to be alternated week in and week out with a powder consisting of equal parts of carbonate of magnesium, citrate of potassium, and bicarbonate of sodium, one and a half drachms thrice daily. I pointed out to my friend that atophan is supposed to be a specific for gout and uric acid, but gout was not even a second cousin to claudication. Moreover, the highly alkaline powder would not dissolve the calcareous deposits in his arteries, but, on the other hand, would tend to precipitate the excess of lime in his blood and the liberal supply he was imbibing in the milk, and thus cause further blocking. I advised him to stop all his physic and milk; to take plenty of lemon squash and claret, and when he returned to London to drink Salutaris water. In a short time his claudication improved. Since then I have not prescribed atophan for myself or anyone else. After Dr. Fraser's experience I shall try to prevent anyone being poisoned with cinchophen.

### Treatment of Haemoptysis by Congo Red

Dr. N. E. D. DE SILVA writes from Ceylon: We ought to be greatly indebted to Drs. Morlock and Scott Pinchin for their article on a new treatment of haemoptysis, by intravenous injections of Congo red, which appeared in the *Journal* of October 27th, 1934 (p. 762). The writers state that one of the difficulties in the procedure would be to know whether the needle has actually entered the vein, owing to the similarity in colour of blood and Congo red. I should like to suggest having two needles ready, one for the purpose of filling the syringe and the other for the actual injection itself. The latter is introduced into one of the veins at the elbow, and after its actual presence in the vein has been revealed by the trickling out of blood, the barrel of the syringe filled with Congo red is attached and the solution injected.

### Maternal Mortality

Dr. H. G. LANGDALE-SMITH (Stechford) writes: Since the authorities are apparently beginning to realize that the scapegoats are not, after all, so much to blame for the high maternal mortality, is it not time that they gave up the muck-rake and looked for the glittering crown? Surely, after so much practical advancement in the active immunization of the community against diphtheria and scarlet fever, it would not be too much to ask the authorities, in those institutions or districts where puerperal fever is most prevalent, to seek and to find some immunologist who would, by cutaneous tests, detect those expectant mothers susceptible to the haemolytic streptococcus, and by active immunization protect them from infection and thus remove a 40 per cent. primary avoidable factor.

### Freudian Use of Analogy

Dr. S. P. CASTELL (London, N.7) writes: The letter from Dr. H. G. Baynes in the *Journal* of December 22nd, 1934 (p. 1186), on the Freudian use of analogy prompts me to wonder whether in psycho-analysis the patient does not do something more for the analyst than merely supply material for study. It is very common for neurotics to confuse analogy with identity, any two things compared being "absolutely similar" [*sic*] or "totally different." I understand a man teaching his own language to foreigners is liable (while correcting their major errors) to catch some of their minor ones himself. May it not be that Freudian analysts, during the many hours of ostentatiously non-criticizing listening to each patient, pick up some of his minor errors and incorporate them in their doctrine? This might make for success in curing a patient who might be more willing to give up major errors if his minor ones were respected. But just as the language teacher would tend to become an imperfect guide for his own countrymen, it might be that the Freudian analyst becomes a very doubtful guide for the reasonably normal man.

### Disclaimer

SIR WELDON DALRYMPLE-CHAMPNEYS writes: My attention has been called to a paragraph about me which appeared in a daily paper of December 27th last, in which reference was made to my medical work. Needless to say this paragraph was inserted without my knowledge or consent.

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The firm of E. Merck, chemical manufacturers of Darmstadt, have opened a new publicity bureau at 37 and 38, Golden Square, London, W.1, where information regarding their specialties will be available. As before, sales stocks will be held by H. R. Napp, Ltd., 3 and 4, Clements Inn, Kingsway, W.C.2.

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### Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 42, 43, 44, 45, 46, 47, 49, and 50 of our advertisement columns, and advertisements as to partnerships, assistantships and locumtenencies at pages 48 and 49.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 8